UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

AUG 16 2011

OFFICE OF
REGIONAL ADMINISTRATOR

Ms. Sara Parker Pauley
Director
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Dear Ms. Pauley:

The United States Environmental Protection Agency has completed its review of the revisions to Missouri's Water Quality Standards under Missouri's Code of State Regulations (CSR), Division 20, Chapter 7. The Missouri Department of Natural Resources sent the revisions package to the EPA for review, as required under federal regulations at 40 CFR §131.20, in a letter dated November 2, 2009. The new or revised water quality standards were approved by the Missouri Clean Water Commission on July 1, 2009, published in the Code of State Regulations on September 30, 2009, and formally submitted to the EPA with the Attorney General certification on November 5, 2009.

Under section 303(c) of the Clean Water Act (33 U.S.C. § 1313(c), states are to review their WQS at least every three years and submit any revised or new WQS to the EPA for review and approval. Federal regulations at 40 CFR §§ 131.20, 131.21, and 131.22 implement these requirements. The November 5, 2009, submission addressed by this letter encompasses a set of revisions of WQS proposed by the MDNR and adopted by the MCWC on July 1, 2009. The proposed rules were published in the Missouri Register on March 2, 2009, which marked the beginning of the public comment period that ended on May 13, 2009. The MCWC held a public hearing on May 6, 2009, to receive public input and comment on the proposed WQS revisions. Based on our review, Missouri's public participation process is consistent with and satisfies the procedural requirements of 40 CFR § 131.20.

Missouri's previous review and revision of its WQS regulations at 10 CSR 20-7.031 was completed and adopted by the MCWC in 2005. On March 28, 2006, Missouri submitted new and revised standards to the EPA. The EPA reviewed Missouri's submission and took action to partially approve and partially disapprove them in its decision letters to the MDNR dated April 28, 2006; February 20, 2007; April 27, 2007; and June 30, 2009. In addition, the EPA made several determinations regarding whole body contact recreation use designations. On October 30, 2006, the EPA determined new and revised standards were necessary for 99 waters. On December 12, 2008, and October 29, 2009, the EPA determined new and revised standards were necessary for a segment of the Mississippi River. Several of the revisions contained in the MDNR's November 5, 2009, WQS submission are in response to the EPA's decisions and determinations.

TODAY'S DECISION

As the Regional Administrator, I am charged with the responsibility of reviewing and approving or disapproving new or revised state WQS under section 303(c) of the CWA. With this letter, the EPA is approving a portion of the new or revised WQS submitted by the MDNR. The EPA is not taking action

on certain provisions included in the MDNR's submission that are not new or revised WQS. The provisions addressed in today's decision are listed below. The enclosure to this letter provides a more detailed description of the EPA's rationale for approving or disapproving the new or revised WQS and for not taking action on provisions that are not new or revised WQS.

Section 1 – Items EPA is Approving

A. 10 CSR 20-7.031 (1) Definitions (K) *Escherichia coli*
B. 10 CSR 20-7.031 (4) Specific Criteria (C) Bacteria
C. 10 CSR 20-7.031 Table A – Bacteria Criteria
D. 10 CSR 20-7.031 Revisions to Copper and Zinc Criteria
E. Table K: Site-Specific Criteria for Sni-a-Bar Creek
F. Table H: Revisions to Stream Class
G. Table H: Resegmentation of Classified Waters
H. Table H: New Water Bodies Added
I. Table H: Water Bodies Deleted
J. Table H: Corrected Uses for Plattin Creek (WBID 1731)
K. Table G: Aquatic Life Used Added to Milan Lake North (Previously named Milan Lake (Old)) (WBID 7144)
L. Table G: Deletion of Two Lakes

Section 2 – Decision on Recreational Use Designations

A. Approved – Whole Body Contact-Category B Use Designations for 77 Water Bodies
B. Approved – Secondary Contact Recreation Use Designations for 162 Water Bodies
C. Approved – Waters with No Recreational Use Designations for 5 Water Bodies
D. Disapproved – Removal of Whole Body Contact-Category B Use Designations for 17 Water Bodies
E. Disapproved – SCR Use Designations on 4 Water Bodies

Section 3 – Decision on Antidegradation

A. Disapproved – 10 CSR 20-7.031 (2) Antidegradation (D)

Section 4 – Decision on Nutrient Criteria

A. Approved – 10 CSR 20-7.031 (4) Specific Criteria (N) Nutrients (3), Table M
B. Disapproved – 10 CSR 20-7.031 (3)(N) Nutrients and Chlorophyll (except as noted in Section 4.A. above)

Section 5 – Other Items EPA is Disapproving

A. Removal of Irrigation Use on the Mississippi River (WBID 1707.03)
B. East Fork Locust Creek and Little East Fork Locust Creek Site-Specific Dissolved Oxygen Criteria
C. Removal of Drinking Water Supply Use on Prairie Home C.A. Lakes (WBID 7444)

Section 6 – Items on which EPA is Taking No Action

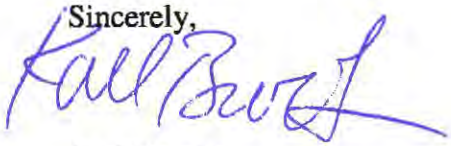
A. Nonsubstantive Changes to 10 CSR 20-7.031

Section 7(a)(2) of the Endangered Species Act (16 U.S.C. § 1536) requires that federal agencies, in consultation with the United States Fish and Wildlife Service, ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat of such species. Regarding today's

approval actions, the EPA is making its decision subject to the outcome of consultation under section 7 of the Endangered Species Act.

We encourage Missouri to continue to update its WQS through the triennial review process. If you have any questions regarding this matter, please contact John DeLashmit, Chief, Water Quality Management Branch, at (913) 551-7821 or delashmit.john@epa.gov.

Sincerely,



Karl Brooks

Enclosure

cc: Leanne Tippett Mosby, MDNR
John Madras, MDNR
John Hoke, MDNR
Charlie Scott, U.S. Fish and Wildlife Service
Andy Roberts, U.S. Fish and Wildlife Service

ENCLOSURE

EPA REGION VII APPROVAL OF PORTIONS OF THE MISSOURI 2009 WATER QUALITY STANDARDS

Under Section 303(c) of the Clean Water Act, the Administrator of the U. S. Environmental Protection Agency is charged with reviewing and approving or disapproving state-adopted new or revised water quality standards. This authority has been delegated to the ten EPA Regional Administrators. The EPA's regulations provide that "The Regional Administrator's approval or disapproval of a State water quality standard shall be based on requirements of the Act as described in §§131.5 and 131.6. (40 CFR 131.21(b)). The EPA regulations at 40 CFR §131.5 provide that the EPA must review the new or revised WQS and determine:

(1) Whether the State has adopted water uses that are consistent with the requirements of CWA;
(2) Whether the State has adopted criteria that protect the designated water uses;
(3) Whether the State has followed its legal procedures for revising or adopting standards;
(4) Whether the State standards that do not include the uses specified in section 101(a)(2) of the Act are based upon appropriate technical and scientific data and analyses, and

In addition, 40 CFR § 131.6 specifies minimum requirements for WQS submissions.

The Sections below contain italicized language representing the Missouri water quality standard rules per 10 CSR 20-7.031. Underlined words represent additions to existing provisions within 10 CSR 20-7.031, and strike-through words are those that have been deleted from 10 CSR 20-7.031.

SECTION 1 – ITEMS the EPA IS APPROVING

1.A. Approved – 10 CSR 20-7.031 (1) Definitions (K) Escherichia coli

Missouri revised its definition for the indicator bacteria relied upon for the criteria to protect human health during recreational activities.

> *(K) Escherichia coli (E. coli) - A type of fecal coliform bacteria found in the intestines of animals and humans. The presence of E. coli in water is a strong indication of recent sewage or animal waste contamination. Sewage may contain many types of disease-causing organisms (pathogens).* ~~*Fecal coliform bacteria - A group of bacteria originating in intestines of warmblooded animals which indicates the possible presence of pathogenic organisms in water.*~~

Previously, Missouri's WQS identified fecal coliform as the indicator bacteria. The revision deletes the definition for fecal coliform and adds text defining *Escherichia coli* (*E. coli*). Missouri's transition from using fecal coliform to using *E. coli* as an indicator organism is

consistent with the EPA's criteria recommendations to protect human health established pursuant to section 304(a) of the CWA. As such, the EPA approves the revisions to the definition.

1.B. Approved – 10 CSR 20-7.031 (4) Specific Criteria (C) Bacteria

Missouri revised its specific criteria for bacteria. In 2006, Missouri adopted *E. coli* criteria for the protection of human health. The standards included a transition time when either fecal coliform or *E. coli* criteria could be used for determining use attainment. The recent revisions serve to complete the transition from fecal coliform to *E. coli*.

> *(4)(C) Bacteria. The protection of whole body contact recreation is limited to classified waters designated for that use. ~~Either of the following bacteria criterion shall apply until December 31, 2008; at which time, only E. coli criterion shall apply.~~ The recreational season is from April 1 to October 31.*
>
> *~~1. Fecal coliform bacteria- the fecal coliform count shall not exceed the criterion listed in Table A as a geometric mean during the recreational season in waters designated for whole body contact recreation.The fecal coliform count shall not exceed two hundred (200) per one hundred milliliters (100 mL) at any time in losing streams. For waters designated for secondary contact recreation, the fecal coliform count shall not exceed one thousand eight hundred (1,800) per one hundred milliliters (100 mL) as a geometric mean during the recreational season; or~~*
>
> *~~2. E. coli bacteria -~~ The E. coli count shall not exceed the criterion listed in Table A as a geometric mean during the recreational season in waters designated for whole body contact recreation. The E. coli count shall not exceed one hundred twenty-six (126) per one hundred milliliters (100 mL) at any time in losing streams. For waters designated for secondary contact recreation, the E. coli count shall not exceed one thousand one hundred thirty-four (1,134) per one hundred milliliters (100 mL) as a geometric mean during the recreational season.*

Consistent with the EPA's 1986 criteria recommendation for establishing bacteria criteria for the protection of human health, Missouri has revised its WQS to complete the transition to *E. coli*. The changes delete language that referred to the EPA's outdated criteria recommendations for fecal coliform and retains the reference to the EPA's bacteria criteria recommendations, pursuant to section 304(a) of the CWA. The revisions above are consistent with federal regulations at 40 CFR 131.11(a), which require states to adopt criteria to ensure protection of the designated uses taking into consideration the EPA's 304(a) criteria guidance. As such, the EPA approves the revised language. See below for the EPA's review and approval of the associated criteria in Table A of Missouri's WQS.

1.C. Approved – Table A: Bacteria Criteria

Missouri revised the criteria for the protection of Whole Body Contact Recreation. The state's submission contains two revisions (Table 1):

- Deletion of the fecal coliform criteria
- Revisions to the criterion to protect WBCR – Category B.

Table 1. Revisions to 10 CSR 20-7.031 Table A: Criteria for Designated Whole Body Contact (WBC) Uses.

Pollutant (/100mL)	*WBC-A*	*WBC-B*	*SCR*
~~*Fecal Coliform Bacteria**~~	~~*200*~~		~~*1800*~~
*E. coli Bacteria***	*126*	~~*548*~~ *206*	*1134*

***Geometric mean during the recreational season in waters designated for recreation or at any time in losing streams. The recreational season is from April 1 to October 31.*

Federal regulations describe that states are to adopt designated uses and criteria to protect those uses. Specifically, "states may adopt sub-categories of a use and set the appropriate criteria to reflect the varying needs of such sub-categories of uses ..." (40 CFR § 131.l0(c)). With respect to criteria, the regulations say that states should establish numerical values based on 304(a) guidance, 304(a) guidance modified to reflect site-specific conditions, or other scientifically defensible methods (40 CFR § 131.l1(b)). The EPA's 1986 304(a) guidance document for bacteria criteria[1] explains the revised recommendation to use *E. coli*, rather than fecal coliform, as the indicator bacteria for protecting human health. In its September 8, 2000 letter, the EPA encouraged Missouri to adopt the EPA's 1986 updated bacteriological ambient water quality criteria to support its WBCR use. In its 2006 submission, Missouri took steps to transition from fecal coliform to *E. coli*. The EPA approved Missouri's criteria for WBCR – Category A and Secondary Contact Recreation. Missouri's 2009 revisions to Table A of the state's WQS complete the transition by deleting the fecal coliform criteria and retaining the *E. coli* criteria as the indicator organism for protecting designated recreational uses. Missouri's decision to delete the fecal coliform criteria is consistent with federal regulations (40 CFR 131.11) and EPA's criteria recommendations, pursuant to section 304(a) of the CWA. As such, EPA approves the deletion of the fecal coliform criteria.

In addition, the 1986 criteria document includes a range of acceptable criteria numbers for *E. coli* based on the risk level chosen by the state. For example, the recommended criterion for an illness rate of 8 per 1000 swimmers is 126 colonies per 100 milliliters (colonies/100 mL), which is the criterion Missouri adopted and the EPA approved for the WBCR – Category A designated use in Missouri's WQS. As discussed in the fact sheet for the 2004 BEACH Act rule,[2] the epidemiological data upon which the EPA based its 1986 bacteria criteria underwent an external peer review.[3] The reviewers evaluated the EPA's analysis of the study data relating illness rates to bacteria concentrations and found:

[1] EPA. 1986. Ambient Water Quality Criteria for Bacteria – 1986. U.S. Environmental Protection Agency. EPA 440/5-84-002. January 1986. http://www.epa.gov/waterscience/criteria/library/ambientwqc/bacteria1986.pdf

[2] EPA. 2006. Water Quality Considerations for Coastal Recreation Waters – Considerations for States as they Select Appropriate Risk Levels. U.S. Environmental Protection Agency. EPA-823-F-06-012. August 2006. http://pubweb.epa.gov/waterscience/beaches/rules/bacteria-risk-level-factsheet.htm#content

[3] External Peer Review of EPA Analysis of Epidemiological Data from EPA Bacteriological Studies, February 2004, available in the public record for the BEACH Act rule, Docket ID No. OW-2004-0010.

> "…the existing data do not support the relationship between rates beyond the level of 1.0% of swimmers and their correlating bacteria concentrations… Based on that peer-reviewed information, EPA does not believe at this time that a state's water quality standards for fresh waters based on any geometric mean or single sample maximum higher than the levels associated with an illness rate of 1.0% would be as protective of human health as EPA's 1986 bacteria criteria."

The fact sheet also discusses state flexibility in selecting the illness rate: "States opting to protect their fresh coastal recreation waters with criteria associated with risk levels within the 0.8% to 1.0% range should recognize that this is a risk management decision analogous to selecting alternate risk levels when adopting human health criteria for carcinogens, and thus would not require a use attainability analysis as described by the federal regulations at 40 CFR § 131.10." It states further that "risk levels in the 0.8% to 1.0% range all protect primary contact recreation." The criteria associated with this range of illness rates are 126 to 206 colonies/100 mL. Missouri's revised WQS adopt 206 colonies/100 mL to protect WBCR – Category B.

In a letter dated April 28, 2006, the EPA stated it was not acting on the criterion for WBCR – Category B Missouri had adopted in the 2005 revisions to its water quality standards regulations. The criterion was 548 colonies/100 mL, which was based on the 1.4% illness rate. In its 2009 WQS submission, Missouri revised the WBCR – Category B *E. coli* criterion from 548 to 206 colonies/100 mL, which is equivalent to a 1.0% illness rate. As discussed above, the revised criterion is as stringent as the EPA's guidance criteria under section 304(a) of the CWA. Consequently, the criterion is sufficient to protect designated uses and consistent with the EPA's regulations at 40 CFR §§ 131.6(c) and 131.11(b)(1)(ii). As such, the EPA is approving the revisions to Missouri's bacteria criteria to protect recreational uses.

1.D. Approved – Table A: Revisions to Copper and Zinc Criteria

10 CSR 20-7.031 Table A – Chronic Copper Criteria
10 CSR 20-7.031 Table A – Acute Zinc Criteria
10 CSR 20-7.031 Table A – Chronic Zinc Criteria
10 CSR 20-7.031 Table A – Revised the table of criteria values for copper and zinc to correspond to revised equations

Missouri revised the following components of the equations for their chronic copper, acute zinc, and chronic zinc criteria (old value is struck and new value is in bold) for the protection of aquatic life to be consistent with the EPA's recommended criteria pursuant to section 304(a) of the Clean Water Act:

Copper
Missouri's Chronic (ug/L): $e^{(\text{~~0.8845~~}\mathbf{0.8545}*\ln(\text{Hardness}) - \text{~~2.044953~~}\mathbf{1.702})} * 0.960$ (ug/L)
EPA's Chronic (ug/L): $e^{(0.8545*\ln(\text{Hardness}) - 1.702)} * 0.960$ (ug/L)

Zinc
Missouri's Acute (ug/L): $e^{(0.8473*\ln(\text{Hardness}) + \text{~~0.884211~~}\mathbf{0.884})} * \text{~~0.978~~}\mathbf{0.98}$ (ug/L)
EPA's Acute (ug/L): $e^{(0.8473*\ln(\text{Hardness}) + 0.884)} * 0.978$ (ug/L)

Missouri's Chronic (ug/L): $e^{(0.8473*\ln(\text{Hardness}) + \sout{0.785271}\mathbf{0.884})} * \sout{0.986}\mathbf{0.98}$ (ug/L)
EPA's Chronic (ug/L): $e^{(0.8473*\ln(\text{Hardness}) + 0.884)} * 0.986$ (ug/L)

Missouri expresses its metals criteria to protect aquatic life in dissolved concentrations. The expression of metals criteria in the dissolved fraction is consistent with the EPA's recommendations because the dissolved fraction more closely approximates the bioavailable fraction of metal in the water column than does the total recoverable fraction. The hardness-dependent metals have a conversion factor applied to the equation to account for the dissolved fraction. The freshwater conversion factors in Missouri's revised zinc criteria differ slightly, but not substantively, from the EPA's national criteria recommendations. The EPA recommends a conversion factor of 0.978 and 0.986 for the acute and chronic equations, respectively. Missouri chose to have the identical conversion factor of 0.98 for both equations. The final criteria values in the associated hardness table show no change to the resulting hardness-dependent criteria as a result of rounding the conversion factor. The equations to derive chronic copper criteria, acute zinc criteria, and chronic zinc criteria is consistent with the EPA's recommendations pursuant to Section 304(a) of the CWA and are considered consistent with the EPA's implementing regulations at 40 C.F.R. § 131.11(b)(1)(i) and are hereby approved.

1.E. Approved – Table K: Interim Site-Specific Criteria for Sni-a-Bar Creek

Missouri adopted interim site-specific dissolved oxygen criteria for Sni-a-Bar Creek in Jackson County. The site-specific criteria are to be applicable from July 1 to September 30 during baseflow conditions. The site-specific criteria applies from the discharge outfall for the City of Blue Springs wastewater treatment facility to 5 miles downstream (W 94º7'19.29", N 39º2'28.51"), as described in Table K of Missouri's WQS (Table 2). For these three summer months, the creek is to maintain a daily minimum of 4.0 milligrams per liter (mg/L) DO and a daily average of at least 4.4 mg/L. During other flow conditions or at other times of the year, Missouri's specific DO criterion of 5.0 mg/L for the protection of aquatic life and warm-water fisheries is applicable.

Table 2. Excerpt from the newly adopted Table K in Missouri's WQS (10 CSR 20-7.031)

<table>
<tr><td>Parameter:</td><td>Dissolved Oxygen</td><td>Daily Average Criterion*</td><td>4.4 mg/L</td></tr>
<tr><td>Waterbody:</td><td>Sni-a-Bar Creek</td><td colspan="2" rowspan="3">Daily average dissolved oxygen concentrations shall not fall below 4.4 mg/L between July 1 and September 30 as measured by a minimum of four samples collected within a 24-hour period. All measurements shall be spaced a minimum of 5 hours apart.</td></tr>
<tr><td>Season:</td><td>July – September</td></tr>
<tr><td>Hydrology:</td><td>Baseflow Conditions</td></tr>
<tr><td>County:</td><td>Jackson</td><td>Daily Minimum Criterion*</td><td>4.0 mg/L</td></tr>
<tr><td>Miles:</td><td>5.0</td><td colspan="2" rowspan="3">Daily minimum dissolved oxygen concentration shall not fall below 4.0 mg/L between July 1 and September 30.</td></tr>
<tr><td>From:</td><td>Confluence with Horseshoe Creek, Section 21, T49N, R29W</td></tr>
<tr><td>To:</td><td>Entry of tributary carrying discharge from Blue Springs Sni-a-Bar wastewater treatment plant, Section 35, T49N, R30W</td></tr>
<tr><td colspan="4">*These criteria shall expire on October 31, 2014. After October 31, 2014, the criteria shall be as stated in Table A.</td></tr>
</table>

Because the weight of evidence from multiple considerations indicates that an alternative criteria may be appropriate for this creek, EPA is approving this interim DO criteria of 4.4 mg/L as a daily average and 4.0 mg/L as a daily minimum for the five-mile segment of Sni-a-Bar Creek specified in Missouri's WQS as being based on a sound scientific rationale and protective of the designated use. As noted above in Table K in Missouri's WQS (10 CSR 20-7.031), these interim criteria expire on October 31, 2014, after which the current Table A DO criteria of 5.0 mg/L will be in effect. According to the information presented in Missouri's submission, the criteria ensure the highest attainable level of DO is maintained in Sni-a-Bar and will be protective of the aquatic life designated use. The interim criteria to support the designated use until October 31, 2014, was set at what is highest attainable in Sni-a-Bar Creek – a daily average of 4.4 mg/L and a daily minimum of 4.0 mg/L.

The interim site-specific criteria are more stringent than the EPA's recommended criteria when early life stages are absent, but are less stringent than the EPA's when early life stages are present. The EPA evaluated fish data gathered by the Missouri Department of Conservation and found that there are fish species present in Sni-a-Bar Creek that have early life stages during the proposed period of applicability of the alternate criteria (July through September). Nevertheless, the habitat and the presence of these species and the data on DO levels in Sni-a-Bar Creek, in conjunction with the reference stream study, indicate the aquatic community in Sni-a-Bar Creek, including early life stages, has adapted to and is maintained by a lower level of DO. Given the findings that early life stages have adapted to the lower level of DO, EPA agrees with the state's findings that the site specific criteria for Sni-a-Bar Creek protect the aquatic life use.

While the EPA is approving the interim site-specific criteria, the EPA expects to coordinate with Missouri and the City of Blue Springs on the collection of additional information to provide further confirmation that the site-specific criteria protect the designated use. The EPA expects the City to investigate and provide additional information about the aquatic community in Sni-a-Bar Creek and demonstrate that the level of sediment oxygen demand observed in Sni-a-Bar Creek does indeed represent a "naturally occurring condition." However, should the result of the additional studies indicate that the creek is not fully maintaining the expected biological community or that alternative waste water treatment is needed to decrease oxygen demanding loads to the stream, then the EPA expects the criteria to be modified appropriately to ensure the designated aquatic life use is maintained.

The results of the Sni-a-Bar Creek study are highly site-specific. Should Missouri wish to establish additional alternate criteria in its WQS in the future, EPA strongly recommends that the agency be consulted early in the process. Coordinating early with EPA will enable the agency to provide technical assistance during the study design phase and insight regarding consistency with national policy and guidance.

1.F. Approved – Table H: Revisions to Stream Class

Missouri's WQS include a classification for all water bodies listed in Table H. Each classified stream is identified as Class P, P1, or C, which are defined in Missouri's regulations (10 CSR 20-7.031(1)(F)) as the following:

- *Class P – Streams that maintain permanent flow even in drought periods.*
- *Class P1 – Standing-water reaches of Class P streams.*
- *Class C – Streams that may cease flow in dry periods but maintain permanent pools which support aquatic life.*

Under Missouri's classification scheme, smaller streams found in the upper parts of watersheds are identified as Class C because they do not maintain permanent flow, while the streams to which they are tributary might be Class P or P1. In its 2009 submission, Missouri corrected the stream classifications for Dry Branch (WBIDs 1405 and 1406) and Pruett Creek (WBIDs 1857 and 1858). In both cases, MDNR explained that the WQS had erroneously identified the downstream portions of the streams as Class C and the upstream portions as Class P. In fact, the reverse should have been the case since the perennial segment (Class P) will naturally be downstream from the intermittent or ephemeral segment containing perennial pools. The correction will ensure that related implementing regulations (e.g., mixing zones) are applied in a manner protective of the designated uses under the expected flow conditions. The revisions (Table 3) are consistent with 40 CFR §§ 131.10, and as such, the EPA approves the correction to the stream classification for Dry Branch and Pruett Creek.

Table 3. Water bodies for which Missouri corrected the Class.

Water Body ID	Water Body Name	Old Class	New Class	County Downstream	HUC8
1405	Dry Br.	C	P	Greene	10290106
1406	Dry Br.	P	C	Greene	10290106
1857	Pruett Cr.	C	P	Crawford	07140102
1858	Pruett Cr.	P	C	Crawford	07140102

1.G. Approved – Table H: Resegmentation of Classified Waters

Missouri submitted revised segment descriptions for a number of waters that were a result of one classified water body being divided into two segments or two classified water bodies being combined into one segment. The extent of the classified waters, as defined by the upstream and downstream legal descriptions, were unchanged. That is, the most upstream and downstream legal descriptions from the Table H submitted to the EPA in 2006 were retained for the revised segments in Missouri's 2009 submission to the EPA. There were a few instances where the legal description was revised to correct a previous error. Those changes are detailed in the Explanation column of Table 4. In some cases, the total length of the classified segments appears to change, but MDNR confirmed these changes are a result of a more precise system for measuring the stream length using updated Geographic Information System (GIS) data.

The EPA has reviewed the resegmented water bodies, as identified in Table 4 of this document, and finds the changes to be consistent with CWA and its implementing federal regulations, and are hereby approved. The EPA's decision on the revisions or omissions related to the designated uses of these waters is addressed below in Section 2.

1.H. Approved – Table H: New Water Bodies Added

Missouri added several new water bodies to its table of classified streams, Table H of 10 CSR 20-7.031. In classifying Black Creek (WBID 3825), Cave Creek (WBID 3818), Deer Creek (WBID 3826) and River des Peres (WBID 3827), Missouri assigned a Class C or P to each water body per the method described in the *Final Classification Guidelines for Water Body Classification*,[4] a Clean Water Commission-approved document intended to provide guidance on assigning the appropriate Class to water bodies based on the hydrologic conditions. Missouri also designated uses for Livestock and Wildlife Watering (LWW), the Protection of Warm Water Aquatic Life and Human-Health Fish Consumption (AQL), and recreational uses.

Federal regulations at 40 CFR § 131.10 state that "the classification of the waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation." The regulations further explain that "a State is not required to conduct a use attainability analysis…whenever designating uses which include those specified in section 101(a)(2) of the Act." (40 CFR 130.10(k)). Missouri's designation of AQL and WBCR – Category B for Black Creek, Cave Creek, and Deer Creek is consistent with the goal uses specified in section 101(a)(2) of the CWA and consistent with the implementing federal regulations. Missouri's designation of the protection of LWW is consistent with 40 CFR § 131.10(a), which requires states to consider other beneficial uses beyond those specified in section 101(a)(2) of the CWA. As such, the EPA approves the new classification of Black Creek, Cave Creek, and Deer Creek and the associated designated uses (Table 5). The EPA also approves Missouri's decision to classify the 2.6-mile segment of the River des Peres and assign LWW and AQL as designated uses; the decision on the secondary contact recreation use designation for the River des Peres (WBID 3827) is addressed in Section 2.B., below.

1.I. Approved – Table H: Water Bodies Deleted

During their 2009 triennial review, Missouri deleted several duplicative entries for classified streams from Table H. The EPA reviewed the deletions (Table 6) and confirmed that the deleted segments were duplications of existing classified water bodies. The deletions result in no change to the extent of Missouri classified waters and serve to eliminate any confusion that might have resulted from the additional entries. The EPA finds the revisions consistent with federal regulations guiding state classification of waters (40 CFR § 131.10), and as such, approves the deletions identified in Table 6.

1.J. Approved – Table H: Corrected Uses for Plattin Creek (WBID 1731)

In its February 20, 2007, decision on Missouri's 2006 triennial review of its WQS regulations, the EPA noted that Plattin Creek (WBID 1731) did not have a designated use for AQL. At the time, the MDNR noted the omission and explained that it was the result of a typographical error from the 1994 triennial review of the WQS. The marks in the designated use columns were

[4] MDNR. 2005. Final Classification Guidelines for Water Body Classification. Missouri Department of Natural Resources. March 2, 2005.

inadvertently shifted from the protection of Livestock and Wildlife Watering (LWW) and AQL to Irrigation and LWW. Missouri corrected the typographical error during the 2009 triennial review and submitted those revisions to the EPA. The revisions to the designated uses for Plattin Creek reflect the state's intent to protect AQL and LWW, as it does for all its classified streams. The uses are consistent with 40 CFR § 131.10, and, as such, the EPA approves the revisions as illustrated in Table 7.

Table 7. Revisions to designated uses for Plattin Creek (WBID 1731). Struck-through text indicates a deletion and underlined text indicates an addition to the WQS.

Water Body	Use Designations			
	IRR	LWW	AQL	WBC
Plattin Cr.	~~X~~	X	X	B

1.K. Approved – Table G: Aquatic Life Use Added to Milan Lake North (Previously named Milan Lake (Old)) (WBID 7144)

Milan Lake North was not previously designated with an aquatic life use; the new aquatic life use adopted by the State for this lake is consistent with the CWA and federal regulations at 40 CFR § 131.10 and is hereby approved.

1.L. Approved – Table G: Deletion of Two Lakes

Missouri deleted Bethany Lake #2 (Harrison Co.) and Crooked Creek Lake (Crawford Co.) from Table G – Lake Classifications and Use Designations. For Bethany Lake #2, the State indicated that it was a duplicate listing in Table G along with Bethany Reservoir which was listed directly beneath it in the Table; the locational information in the 2006 Table G verify the duplicate listing of this lake. As noted below, in Section 6 and in Table 16 of this decision, the name of Bethany Lake #2 has been revised and is now named North Bethany City Reservoir. Missouri also provided information to the EPA that Crooked Creek Lake has dried up and is no longer a body of water. The EPA approves the deletion of these lakes from Table G – Lake Classifications and Use Designations.

SECTION 2 – DECISION ON RECREATIONAL USE DESIGNATIONS

Federal Regulatory Requirements

Section 101(a)(2) of the Clean Water Act states that "…it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." Clean Water Act Section 303(c)(2)(A) requires water quality standards to "protect the public health and welfare, enhance the quality of water, and serve the purposes of this Chapter." The EPA's regulations at 40 C.F.R. Part 131 interpret and implement these provisions through a requirement that water quality standards protect section 101(a)(2) uses unless those uses have been shown to be

unattainable, effectively creating a rebuttable presumption of attainability.[5] Unless the state or tribe rebuts this presumption, a default designation of the section 101(a)(2) uses applies. This approach was upheld in Idaho Mining Association v. Browner, 90 F.Supp. 2d 1078, 1092 (D. Id. 2000). Where a state or tribe believes that a use specified in section 101(a)(2) is not attainable and wishes to remove or adopt a subcategory of a use specified in section 101(a)(2) of the Act which require less stringent criteria, a state or tribe must show that the use change will not result in removing an existing use and complete a use attainability analysis. (40 CFR 131.10(h)(1), (j)(2)).

The federal regulations at 40 CFR § 131.3(g) define a UAA as a "structured, scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in 40 CFR §131.10(g)." A UAA may be used to determine the use that is feasible to attain in the water body and provides the supporting documentation when a state or tribe refines its designated uses. The EPA requires that a UAA provide sufficient information to support a technical and legally defensible determination that a section 101(a)(2) use is not attainable and to support the designation of any use that does not provide protection for a section 101(a)(2) use (40 CFR § 131.6(f)). In other words, there must be an adequate scientific and technical rationale in the administrative record to support the resulting use change. UAAs must have sufficient data and information to demonstrate that attaining a section 101(a)(2) use is not feasible, citing one or more of the six factors described in 40 CFR § 131.10(g). In conducting an analysis to determine what use(s) is infeasible to attain due to one or more of the six factors, data analysis and constraints that were identified in the UAA can also be used to determine the feasible use that is attainable.

Missouri's Submission

Missouri revised the recreational use designation for several waters by adding the Whole Body Contact – Category B (WBC-B), adding Secondary Contact Recreation (SCR), or removing the WBC-B designated use. Missouri designated 76 water body segments for the protection of Whole Body Contact Recreation – Category B (WBC-B). For 33 water body segments, Missouri designated SCR in place of WBCR. For 20 water body segments, Missouri removed WBC-B and did not designate any recreational use. Missouri also added a new classified water body segment (WBID 3827 River des Peres) to Table H and designated it for SCR. In addition, the State added SCR to 12 lakes, in Table G – Lake Classifications and Use Designations.

Missouri provided to the EPA a copy of the UAAs upon which it relied to revise the designated recreational uses. The UAAs were conducted during the 2007 recreation season according to the *Missouri Recreational Use Attainability Analysis: Water Body Survey and Assessment Protocol* (December 19, 2007), hereafter referred to as the "Protocol." The stated purpose of the Protocol is to provide "guidance for any party interested in conducting investigations to provide scientifically defensible information on existing and attainable recreational uses of the classified waters of the State." The Protocol outlines the pre-assessment and field procedures for conducting a recreational UAA to determine if "natural, ephemeral, intermittent or low flow conditions, as per 40 CFR 131.10(g)(2)…prevent the attainment of recreational uses." Federal regulations at 40 CFR § 131.10(g)(2) allow states to remove a designated use which is not an

[5] 40 C.F.R. § 131.10(j).

existing use if the state can demonstrate the use is unattainable because "natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met."

Under Missouri's Protocol, WBCR is considered attainable if the water body has a maximum depth measurement of at least 1.0 meter or a median depth of at least 0.5 meter. SCR is considered attainable if the water body has a maximum depth measurement of at least 0.5 meter. The survey procedures outlined in the Protocol include that the UAA (1) should be conducted during the defined recreation season (April 1 – October 31), (2) should be conducted during base flow, and (3) shall contain a minimum of three, evenly-spaced survey sites. Missouri also included procedures for measuring and recording the depth at each survey site.

Several of the water bodies for which Missouri submitted revised designated recreation uses have data from UAAs conducted under the guidelines in the 2004 version of the state's Protocol. The 2004 version of Missouri's Protocol included the maximum and average depth criteria, but did not describe how those depths measurements were to be gathered and assessed for determining attainability. The lack of specificity in the 2004 Protocol resulted in UAAs that were conducted using field procedures that varied among the MDNR, the EPA, contractors, and other consultants. In 2007, Missouri updated the Protocol from its 2004 version and revised the 0.5-meter *average* depth criterion to a 0.5-meter *median* depth criterion for determining whether WBCR is attainable. In revising its Protocol, Missouri attempted to develop guidelines for gathering depth measurements that are more thorough, repeatable, and survey a greater extent of the stream. As a result, the field work conducted in accordance with the 2007 Protocol revisions should provide a more complete picture of the stream conditions with respect to the median depth.

EPA's Review

The EPA evaluated the UAAs and the supporting data provided by the MDNR to determine whether the UAAs were sufficient to make a technically and legally defensible demonstration that the WBCR use is not attainable and whether the data contained in the UAAs indicate that SCR is an attainable use. The EPA conducted its analysis pursuant to its implementing federal regulations, specifically 40 CFR §§ 131.6(a), (f), and 131.10. These three sections govern States' adoption of designated uses by requiring States to adopt use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act (40 CFR § 131.6(a)), submit general information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) of the Act (40 CFR § 131.6(f)), and set forth the circumstances and process by which States adopt and revise their designated uses (40 CFR § 131.10). For the waters where Missouri did not adopt a WBCR use and instead provided a UAA, the EPA looked to the statute and regulations governing the establishment and removal of designated uses, in particular, 40 CFR § 131.10(g), which specifies the factors that may be used in determining the attainability of CWA section 101(a)(2) uses.

The majority of Missouri's UAAs focused solely on the extent to which the depth of the water is or is not sufficient to support a recreational use. In cases where the depth and/or flows are

sufficiently low, the factor listed at 40 CFR § 131.10(g)(2) is relevant in assessing whether full recreational uses are attainable. The EPA evaluated the depth data and other available data to determine whether the information supported the state's conclusion that recreation uses are not attainable for these waters. In addition to the federal regulations, the EPA used the *Missouri Recreational Use Attainability Analysis: Water Body Survey and Assessment Protocol* (December 19, 2007) to evaluate the depth data and the extent to which the depth of these waters is or is not sufficient to support a recreational use. Where the MDNR provided data related to the depth of a water body, the EPA used the Protocol to the greatest extent practicable in evaluating the data. The EPA considered the information presented in the 2007 UAAs and, where available, the maximum depth measurements from the 2005 and 2006 UAAs; the EPA also considered comments made by the public where available. In Missouri's submission, there are similar examples where Missouri designated WBCR as the designated use because public comments illustrated that the low flow conditions did not prevent attainment of the use, despite depth measurements that would indicate otherwise.

EPA's Determinations

Under its authority contained in section 303(c)(4)(B) of the CWA, the EPA made a determination regarding the recreational use designations for 142 water bodies in Missouri. In a series of three letters (October 31, 2006,[6] December 12, 2008, [7] and October 29, 2009[8]) the EPA determined:

- For 42 water bodies, new or revised recreation uses are not needed;
- For 99 water bodies, new or revised standards are necessary to meet the requirements of the CWA; and
- For the Mississippi River, new or revised standards are necessary to meet the requirements of the CWA.

Many of the 100 water bodies (99 water bodies plus the Mississippi River) subject to the EPA's determination are included in today's decision. As a result of revised legal descriptions submitted in Table H of Missouri's WQS, the 100 waters are now identified as 104 classified water bodies, raising the total number of waters discussed in the EPA's determination letters from 142 to 146. Refer to Section 1.G in this decision document for additional information about the resegmented waters.

While there are still some waters where the EPA believes additional protection is warranted, a significant portion of today's decision shows congruence between the EPA's October 31, 2006 determination and Missouri's revised use designations. For those waters in today's decision where the EPA approves the designated use change as being consistent with the CWA and its

[6] October 31, 2006, determination letter from Ben Grumbles, EPA Assistant Administrator, to Doyle Childers, MDNR Director, on recreational use designations for 141 water bodies in Missouri.
[7] December 12, 2008, determination letter from Ben Grumbles, EPA Assistant Administrator, to Doyle Childers, MDNR Director, on recreational use designations for 166 miles of the Mississippi River.
[8] October 29, 2009, determination letter from Peter Silva, EPA Assistant Administrator, to Mark Templeton, MDNR Director, on recreational use designations for 28.6 miles of the Mississippi River.

implementing regulations, the EPA is no longer obligated under the determination to promptly prepare and publish replacement regulations for Missouri. For those remaining waters, the EPA would like to reiterate that it is the Agency's preference for states to establish their own WQS regulations, and the EPA strongly encourages Missouri to do so in response to today's decision and the October 31, 2006 determination.

2.A. Approved – Whole Body Contact-Category B Use Designations

Missouri designated 77 waters for the protection of Whole Body Contact Recreation-Category B (WBC-B). The adoption of WBC-B for those waters is consistent with 40 C.F.R. §§ 131.6(a) and 131.10 because Missouri has adopted a designated use specified in CWA section 101(a)(2). As such, no UAA is required (40 C.F.R. § 131.10(k)). Thus, the EPA approves Missouri's adoption of WBC-B use designation for these waters listed in Table 8.

On October 31, 2006, the EPA made a determination that new or revised water quality standards were necessary for 99 water bodies in Missouri to meet the CWA section 101(a)(2) interim goal that, wherever attainable, water quality provides for recreation in and on the water. When the EPA makes a determination, the statute requires the EPA to "promptly prepare and publish proposed regulations setting forth a revise or new water quality standard." Seventy-two of the 76 newly designated waters were subject to the EPA's determination. For these 72 waters, Missouri has submitted revised standards designating WBC-B recreation use, and the EPA is approving these revisions because they are consistent with the CWA and federal regulations. Therefore, the obligation for the EPA to prepare proposed replacement federal regulations is no longer applicable for 72 of the 99 waters subject to the EPA's October 31, 2006 determination.

Three of the 76 new WBC-B use designations are for segments of the Mississippi River. On December 12, 2008, the EPA determined that new and revised standards were necessary for a portion of the Mississippi River that flows from Dam 27 (upstream of St. Louis) to North Riverfront Park and a portion of the river that flows from the confluence with the Meramec River to the confluence with the Ohio River. In this submission, Missouri resegmented the Mississippi River, and the portions of the river subject to the EPA's December 12, 2008 determination are now identified by WBIDs 1707.01, 1707.03, and 3701. (For additional information regarding the resegmenting of the Mississippi River, refer to Section 1.G of this document.) Missouri designated these three segments for WBC-B recreation. The adoption of WBC-B for those waters is consistent with 40 C.F.R. §§ 131.6(a) and 131.10 because Missouri has adopted a designated use specified in CWA section 101(a)(2), and as such, the EPA is approving these new designations. With the approval of these WBC-B use designations, the obligation for the EPA to prepare proposed replacement federal regulations is no longer applicable for the portions of the Mississippi River subject to the EPA's December 12, 2008 determination.

The last of the 76 new WBC-B use designations, East Yellow Creek (WBID 0597), was not one of the 99 waters for which the EPA determined new and revised standards were necessary. The EPA's October 31, 2006 determination stated that no new or revised standards were necessary for East Yellow Creek, and at that time, the use attainability analysis (UAA) supported Missouri's conclusion that secondary contact recreation (SCR) was the highest attainable use. However, Missouri found the results of the 2007 UAA demonstrated that WBC was attainable

and has designated it for WBC-B during this triennial WQS review. The EPA is approving that use designation with this decision.

2.B. Approved – Secondary Contact Recreation Use Designations

Missouri's WQS contain a designated use for the protection of secondary contact recreation (SCR) uses, such as boating, canoeing, fishing and wading. Missouri designated 120 water body segments, and 12 lakes, for SCR in addition to the existing designation for Whole Body Contact (WBC) recreation. The designation of SCR is consistent with 40 CFR § 131.10(c), which allows states to adopt subcategories of uses to reflect the varying needs of such uses. In those cases where Missouri is adopting the SCR use in addition to the WBC recreation use, the EPA is approving the designation of the SCR use, as identified in Table 9. Those cases where Missouri has completed a UAA and demonstrated that it is feasible to attain only SCR, the EPA will address separately below.

In the case of Blue Ditch (WBID 3147) and three segments of the Mississippi River (WBIDs 1707.01, 1707.03, and 3701), the EPA is taking action today to approve the SCR use designations. Missouri designated these segments for SCR in their 2006 triennial review, but the EPA withheld action because the Agency had determined that new or revised standards were necessary to meet the requirements of the CWA.[9] As noted above, Missouri has also designated Blue Ditch and the three segments of the Mississippi River for WBC-B, thus meeting the 101(a)(2) goal of the CWA and satisfying the terms of the EPA's determination for those segments.

Missouri designated SCR for 34 water bodies. The EPA evaluated the data contained in the 2007 UAAs provided by MDNR and, where available, data collected in the 2005 and 2006 UAAs, according to the decision criteria described above. The EPA reviewed the location of the survey sites to ensure they were on the classified segment, corrected errors to the drought information included in some of the UAAs, reviewed public comments, evaluated the MDNR's review committee recommendations, and examined the reported depth data. For 30 water bodies, the data indicate that the depths measured do not meet the criteria necessary to support a WBCR designation, but SCR is an attainable use. Where public comments were made indicating a recreational use had been observed, the EPA reviewed the comments to ensure the observed recreational uses were consistent with Missouri's definition of SCR at 10 CSR 20-7.031(1)(C)9 which states:

> *Secondary contact recreation - Uses include fishing, wading, commercial and recreational boating, any limited contact incidental to shoreline activities, and activities in which users do not swim or float in the water. These recreational activities may result in contact with the water that is either incidental or accidental and the probability of ingesting appreciable quantities of water is minimal. Assignment of this use does not grant an individual the right to trespass when a land is not open to and accessible by the public through law or written permission of the landowner.*

[9] For additional information refer to: EPA's decision letter to MDNR on the state's designation of SCR uses (June 30, 2009); EPA's determination letter regarding Blue Ditch (October 31, 2006); and EPA's determination letters on the Mississippi River (December 12, 2008, and October 29, 2009).

The EPA notes that comments and/or testimony exist describing various types of recreation occurring in a number of these streams including wading, fishing, jet skiing, and child's play or the potential for recreation by virtue of their proximity to residential or recreational areas. The EPA did not believe that this information was specific enough for the EPA to base a disapproval of the absence of a WBC-B use. Nevertheless, the EPA recommends that the MDNR consider the comments and testimony in reviewing the designated uses for these waters pursuant to 40 CFR § 131.20(a), and consider whether WBC recreation uses are appropriate for these waters despite the absence of sufficient depth to meet the MDNR's Protocol. The EPA's regulation at 40 CFR § 131.20(a) requires States to re-examine the designation of uses that do not include the uses specified in CWA section 101(a)(2) every three years to determine if new information has become available indicating that CWA section 101(a)(2) uses for those waters are now attainable. If new information indicates that a CWA section 101(a)(2) use is now attainable, the State must revise its standards accordingly.

Consequently, the EPA concludes the data support Missouri's decision to designate SCR for these 30 water bodies, and hereby approves the SCR use designations (Table 10).[10] Nineteen of these waters were subject to the EPA's October 31, 2006 determination. The EPA's approval of the revised use designation satisfies the state's and the EPA's obligations under the determination. The data for the remaining four water bodies indicate the WBCR use is attainable; those four water bodies are discussed below in Section 2.D.

2.C. Approved – Waters with No Recreational Use Designations

The EPA evaluated the data contained in the 2007 UAAs provided by the MDNR and, where available, data collected in the 2005 and 2006 UAAs, according to the decision criteria described above. The EPA reviewed the location of the survey sites to ensure they were on the classified segment, corrected errors to the drought information included in some of the UAAs, reviewed public comments, evaluated MDNR's review committee recommendations, and examined the reported depth data. For five water body segments, the data indicate that the depths measured do not meet the criteria necessary to support either a WBCR designated use or a SCR designated use. Additionally, the EPA reviewed the UAAs to ensure that no public comment or other evidence existed to support a recreational use. Consequently, the EPA concludes that the data support the absence of a recreational use for these five water body segments and hereby approves Missouri's decision to remove the WBC-B designated use (Table 11). None of these water bodies were subject to the EPA's October 31, 2006 determination.

2.D. Disapproved – Removal of Whole Body Contact-Category B Use Designations

The EPA evaluated the data contained in the 2007 UAAs provided by MDNR and, where available, data collected in the 2005 and 2006 UAAs, according to the decision criteria described above. The EPA reviewed the location of the survey sites to ensure they were on the classified segment, the drought information included in some of the UAAs, the public comments, the MDNR review committee recommendations, and the reported depth data. For those waters where

[10] Seven water bodies in Table 10 identify WBCR as EPA's Determination Use; updated UAA information demonstrates that SCR is the feasible use.

the EPA disapproves the new or revised designated uses, the State may correct these deficiencies by designating these waters consistent with the CWA and federal regulations or providing a use attainability analysis consistent with 40 C.F.R. § 131.10 for each water body. If not corrected within 90 days, the statute requires the EPA to "promptly prepare and publish proposed regulations setting forth a revised or new water quality standard." The EPA's strong preference is for States to establish their own water quality standards regulations. To that end, EPA strongly encourages Missouri to expeditiously revise its own water quality standards taking into account any available data. If, in the course of preparing its own regulation, Missouri identifies or collects additional data or information for a particular water body segment that leads it to a different conclusion than contained in today's disapproval, Missouri may present that information and conclusion for the EPA's review.

Data Indicate SCR is Attainable

As described above, MDNR's protocol includes a 0.5-meter maximum depth criterion for determining where SCR is attainable. The EPA commented to MDNR, during the public comment period prior to formally adopting these revisions, that it should consider designating SCR where the depth indicates it is attainable. In its response to the EPA's comment, MDNR explained several issues that might arise were the department to apply the depth criteria. While the EPA understands the administrative and policy concerns raised by the department, the EPA's interpretation of the CWA and its implementing regulations is that states should designate the attainable use that expresses the state objectives for a water body or set of water bodies, or the use that is feasible to attain in the water body. The EPA reviewed the data contained in the UAAs and found 12 water bodies have sufficient depth to support SCR activities (Table 12). Consequently, the EPA concludes the data do not support the absence of a recreation use for these 12 water body segments and, as such, disapproves Missouri's decision to remove the WBC-B designated use.

Data Indicate WBCR is Attainable

Douger Branch (WBID 3810)

In its submission, Missouri resegmented Douger Branch into two segments, renaming the upper portion of this segment Chat Creek (WBID 3168) and identifying the lower portion as Douger Branch (WBID 3810). MDNR conducted a UAA that encompassed both Chat Creek and Douger Branch. Survey site #1 was located on Chat Creek, and sites #2 and #3 were on Douger Branch. In their review, MDNR noted that "the stream did not meet the depth criteria in any of the 3 sites evaluated. However, due to comments received, the committee recommends the WBCR use designation be retained. Also due to comments received, the committee recommends SCR be assigned." The EPA contacted MDNR regarding the discrepancy between their recommendation and the final use designation for Douger Branch, which was not assigned any recreational uses. MDNR confirmed that during the resegmenting process, recreation uses were

assigned to Chat Creek and erroneously excluded from Douger Branch. MDNR took note of this oversight and stated their intent to correct it. Additionally, the information provided by MDNR indicates that depth data was only collected at two sites on Douger Branch, rather than the minimum three sites prescribed in Missouri's Protocol, thereby not providing the necessary scientific and technical rationale in the administrative record. In the meantime, the EPA is obligated to approve or disapprove Missouri's revised WQS for Douger Branch. The EPA concludes that the public comments and administrative record do not support the absence of a recreation use for Douger Branch (WBID 3810), and as such, the EPA disapproves Missouri's decision to remove the WBC-B designated use.

Menorkenut Slough (WBID 2771)

In its submission, Missouri resegmented Menorkenut Slough into two segments, renaming the upper portion Ditch #16 (WBID 3813) and identifying the lower portion as Menorkenut Slough (WBID 2771). MDNR conducted a UAA that encompassed both Ditch #16 and Menorkenut Slough. Survey sites #1-8 were located on Ditch #16 and sites #9-13, and #15 were on Menorkenut Slough. In reviewing the data for Menorkenut Slough EPA found the median depth measurement at Site #15 (0.55 meters) met Missouri's criteria for WBCR. The EPA concludes the data do not support the absence of a recreation use for Menorkenut Slough and, as such, disapproves Missouri's decision to remove the WBC-B designated use.

Data Insufficient to Rebut Presumption

In conducting its evaluation, the EPA found a few issues with the data for some waters (described below), leading the Agency to conclude that the data are not adequate to provide the necessary scientific and technical rationale in the administrative record supporting Missouri's decision:

Deberry Creek (WBID 1156)

In its revised WQS, Missouri removed the WBC-B designated use from Deberry Creek. The UAA provided data from one site, but further investigation revealed the survey site was located on Conns Creek, a classified stream to which Deberry Creek is a tributary. No data was collected from Deberry Creek, and as such, Missouri has not rebutted the presumption that WBCR is attainable. Accordingly, the EPA has determined that the removal of the uses specified in Section 101(a)(2) of the CWA are not based upon appropriate technical and scientific data and analyses as required by 40 CFR §§ 131.5 and 131.10and disapproves Missouri's decision to remove the WBC-B designated use.

St. Johns Ditch (WBID 3707)

Missouri removed the WBC-B designated use and designated SCR for St. Johns Ditch. The depth and evidence provided in the UAA support the SCR use designation; however, the UAA was conducted during drought conditions. The EPA requested MDNR provide information demonstrating that the UAA was conducted at representative base flow, as prescribed in

Missouri's Protocol. The information provided by MDNR indicates that the flow in St. Johns Ditch was likely impacted by the drought conditions and, in turn, the depth data would not be representative of base flow conditions. For this reason, Missouri has not rebutted the presumption that WBCR is attainable. Accordingly, the EPA has determined that the removal of the uses specified in Section 101(a)(2) of the CWA are not based upon appropriate technical and scientific data and analyses as required by 40 CFR §§ 131.5 and 131.10, and disapproves Missouri's decision to remove the WBC-B designated use and to adopt the SCR use designation.

Modoc Creek (WBID 3821)

On October 31, 2006, the EPA determined that new or revised WQS were necessary for Quick Creek (WBID 1648). In its submission to the EPA, Missouri submitted revised segment descriptions for Quick Creek (WBID 1648), as described in Section 1.G. above and in Table 4; the resegmentation resulted in the upper portion of Quick Creek being renamed Modoc Creek (WBID 3821) that is a 3.3-mile Class C stream. Missouri did not assign a recreational use for Modoc Creek and did not submit a UAA to EPA. As such, Missouri has not rebutted the presumption that WBCR is attainable in Modoc Creek. Accordingly, the EPA has determined that the lack of the uses specified in Section 101(a)(2) of the CWA are not based upon appropriate technical and scientific data and analyses as required by 40 CFR §§ 131.5 and 131.10 and hereby disapproves Missouri's decision to withhold the WBC-B designated use.

2.E. Disapproved – SCR Use Designations

Coon Creek (WBID 0187)

On October 31, 2006, the EPA determined that new or revised WQS were necessary for Coon Creek (WBID 0187). In its submission, Missouri designated Coon Creek for SCR, withholding the designation for WBC-B because "the department did not believe the data were representative of baseflow conditions."[11] MDNR cited 3.9 inches of rain in the five days prior to the 2006 UAA, and 3.1 inches in the six days prior to the 2007 UAA. The EPA evaluated precipitation data collected in Middletown, MO (Station Index No. 23-5562-2) by the National Oceanic and Atmospheric Administration and found the data cited by MDNR for the days prior to the UAAs could not be substantiated (2006) or had been discounted by NOAA as containing "highly suspect values" (2007). The EPA found precipitation data from another nearby weather station (Vandalia, MO, Station Index No. 23-8577-2) recorded less than 1 inch of rain in the week prior to the 2007 UAA. No additional information was provided by MDNR to support its assertion the 2006 and 2007 UAAs were unrepresentative. Therefore, the EPA is relying on the data provided in the 2005, 2006, and 2007 UAAs, which indicate Coon Creek has adequate depth to support WBCR.

The information provided by Missouri in the UAAs and public comment does not sufficiently rebut the presumption that WBCR is attainable in Coon Creek. The EPA has determined that the state's adoption of SCR is not based upon appropriate technical and scientific data and analyses

[11] Missouri Register. 2009. Order of Rulemaking 10 CSR 20-7.031. September 15, 2009. Vol. 34, No. 18. page 2008.

as required by 40 CFR §§ 131.5 and 131.10; therefore, the EPA disapproves the SCR designated use for Coon Creek.

Mississippi River (WBID 1707.02)

In 2005, the St. Louis Metropolitan Sewer District (MSD) submitted a UAA to MDNR attempting to address the attainability of recreational uses on the 28.6-mile segment surrounding the City of St. Louis. MDNR did not find MSD's UAA to sufficiently demonstrate that a whole body contact recreation use cannot be attained and proposed to the Missouri Clean Water Commission that the 28.6-mile segment be designated whole body contact recreation. The Missouri Clean Water Commission rejected MDNR's proposal and instead directed MDNR to designate the entire 190.5-mile segment of the Mississippi River for secondary contact recreation. MDNR subsequently adopted the secondary contact recreation use designation and formally submitted it and MSD's UAA to the EPA for review on March 28, 2006.

On October 29, 2009, the EPA made a determination on the portion of the Mississippi River near St. Louis (WBID 1707.02) that new or revised standards were necessary. This segment, which flows from North Riverfront Park downstream to the confluence with the Meramec River, is designated for SCR. The EPA determined that new or revised standards are necessary because the majority of this 28.6-mile segment has shoreline features that include public parks, boat ramps, bike trails and some sandy areas with gentle sloping banks and the available information does not demonstrate that water quality necessary to support a whole body contact recreation use is not attainable in this segment. Moreover, the EPA's regulations at 40 CFR § 131.10(b) provide that a State "shall ensure that its water quality standards provide for attainment and maintenance of the water quality standards of downstream waters." Accordingly, the EPA is disapproving the SCR use designation for this segment of the Mississippi River (WBID 1707.02).

River des Peres (WBID 1710)

On October 31, 2006, the EPA determined that new or revised water quality standards were necessary for one segment (WBID 1711) of River des Peres. The EPA also determined that no designated uses for protection of recreation were necessary for another segment (WBID 1710). In its 2009 submission, Missouri resegmented the River des Peres, combining WBIDs 1710 and 1711, and designated the resulting segment (WBID 1710) for SCR. Federal regulations allow states to designate a use that is less stringent than what is required by section 101(a)(2) of the CWA if the state can demonstrate that attaining the designated use is not feasible because of one or more of the factors listed at 40 CFR § 131.10(g).

Missouri Environmental Consultants (MEC) conducted a UAA for River des Peres in 2005 which Missouri provided to the EPA with the 2006 WQS triennial review submission. The EPA's October 31, 2006, determination letter to MDNR provides a thorough discussion of the EPA's evaluation of the information presented in the 2005 UAA that supported the EPA's conclusions in its determination. To support its 2009 WQS triennial review, which is the subject of today's decision, Missouri provided to the EPA new information in the form of public comments relating to observed uses of the River des Peres.

In addition to several people citing the use of the river for SCR activities (e.g, boating and fishing), comments from one person stated that they had personally observed WBCR activity in this River segment within the last 10-15 years. Specifically, the individual reported having witnessed people jumping off of a trestle into the River des Peres "whenever the water comes up," (the commenter clarified that this activity occurred when the water was higher than normal, but not during periods of major flooding) near the River's confluence with Gravois Creek. MDNR discussed this comment in the states' Order of Rulemaking stating that the "infrequent, historical WBCR use during high-flow conditions does not represent an existing WBCR use that has been attained."[12] Another public comment, in the form of a YouTube video, shows a man swimming in this segment of the River des Peres (http://www.youtube.com/watch?v=kOAVYDXLe0o). This video comment was not considered by the MDNR. The MDNR review committee found the UAA to be inconclusive despite the fact that these public comments provide information indicating previous WBCR use by the public. The EPA believes consideration of relevant public comments to be critically important when considering a designated use change.[13]

The EPA does not believe that the information provided by Missouri in the UAA and Missouri's consideration of the public comments sufficiently rebut the presumption that WBCR is attainable in River des Peres. Absent a sufficient showing of why WBCR is not attainable, a designation of only SCR is not approvable. MDNR may adopt WBCR in this segment of the River des Peres to address EPA's disapproval. In addressing the EPA's disapproval of Missouri's adoption of SCR for the River des Peres, Missouri will need to take into consideration the requirements of 131.10(b) to ensure that the standards for the River des Peres provide for the attainment and maintenance of water quality standards for the waters downstream in the Mississippi River (WBID 1707.02).

Wamsley Creek (WBID 505)

On October 31, 2006, the EPA determined that new or revised water quality standards were necessary for Wamsley Creek (WBID 505). Federal regulations allow states to designate a use that is less stringent than what is required by section 101(a)(2) of the CWA if the state can demonstrate that attaining the designated use is not feasible because of one or more of the factors listed at 40 CFR § 131.10(g). In its submission, Missouri submitted a 2007 UAA and designated Wamsley for SCR, withholding the designation for WBC-B because "no WBCR was observed", "no interviews were conducted during the survey", and "the stream did not meet the depth criteria at any of the 3 sites evaluated." The MDNR review committee referred to two comments received during the public comment period which cited SCR.

The EPA reviewed the public comments for Wamsley creek. One of the comments referred to a wading area at an old rock quarry site; another commentor stated that his grandsons hunt, play and swim in the creek. The EPA followed up on the latter comment to verify the commentor's statement with respect to swimming. The commenter confirmed that his grandsons swam in Wamsley Creek in the three-to-four foot pools in the bends of the creek. As discussed above, the

[12] Missouri Register. 2009. Order of Rulemaking 10 CSR 20-7.031. September 15, 2009. Vol. 34, No. 18. page 2010.

[13] See EPA's actions on Iowa's WQS dated November 24, 2009, June 29, 2010, and November 19, 2010.

EPA believes consideration of relevant public comments to be critically important when considering a designated use change.[14]

In summary, public comments submitted to the MDNR indicate that Wamsley Creek is used for WBCR. In the face of evidence that the segment is being used for WBCR, the state must designate WBCR in the absence of information demonstrating why WBCR is not attainable in this water body. The information provided by the public comments does not sufficiently rebut the presumption that WBCR is attainable in Wamsley Creek. MDNR may adopt WBCR in this segment of the Wamsley Creek to address the EPA's disapproval.

SECTION 3 – DECISION ON ANTIDEGRADATION

3.A. Disapproved – 10 CSR 20.7.031 (2) Antidegradation (D)

Missouri revised one provision relating to the implementation of its antidegradation policy. The revision serves to incorporate by reference the antidegradation implementation procedures developed by MDNR.

> *(D) The three (3) levels of protection provided by the antidegradation policy in subsections (A) through (C) of this section shall be implemented according to procedures hereby incorporated by reference and known as the "Missouri Antidegradation Rule and Implementation Procedure, April 20, 2007, Revised May 7, 2008." No later amendments or additions are included. This document shall be made available to anyone upon written request to the Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, PO Box 176, Jefferson City, MO 65102-0176. ~~developed by the department. The antidegradation implementation procedure shall go through stakeholder development and the finalized procedure shall be referenced by this rule before it becomes effective.~~*

The revisions to incorporate the rule referenced document *"Missouri Antidegradation Rule and Implementation Procedure, April 20, 2007, Revised May 7, 2008"* were published in the Code of State Regulations on July 31, 2008. Missouri had previously submitted this revision to the state's WQS along with the Missouri Antidegradation Rule and Implementation Procedure (May 7, 2008) document for the EPA's review in a letter dated September 2, 2008. MDNR resubmitted this revision to the EPA in its letter dated November 5, 2009. Today the EPA is disapproving these antidegradation implementation procedures, which exempt proposed activities from a Tier 2 antidegradation review where the proposed water quality changes are considered not significant, or to be *de minimis*.

Background Information

The EPA's water quality standards regulations require that state-established water quality standards include an antidegradation policy. The purpose of an antidegradation policy is to maintain and protect existing uses and high quality waters. The antidegradation policy must, at a minimum, be consistent with certain federal standards contained in 40 C.F.R. § 131.12(a)(1-4).

[14] See EPA's actions on Iowa's WQS dated November 24, 2009, June 29, 2010, and November 19, 2010.

These federal standards establish three levels of water quality protection: Tier 1, Tier 2, and Tier 3.

Tier 2 protection applies when ". . . the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water . . . ." (40 C.F.R. § 131.12(a)(2)). The regulation provides further that Tier II water "quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the state shall assure water quality adequate to protect existing uses fully." (*Id.*)

The text of 40 C.F.R. § 131.12(a)(2) does not provide directly for a *de minimis* exception. *De minimis* exceptions are created through an "administrative law principle which allows an agency to create unwritten exceptions to a statute or rule for insignificant or *de minimis* matters." (Kentucky Waterways Alliance v. Johnson, 540 F.3d 466, 483 (6th Cir. 2008)). The authority to create an exemption "is not an ability to depart from the statute, but rather a tool to be used in implementing the legislative design." (*Id.*) The implied exemption authority is "narrow in reach and tightly bounded by the need to show that the situation is genuinely *de minimis* or one of administrative necessity." (*Id.*). Accordingly, this authority only applies "when the burdens ofregulation yield a gain of trivial or no value." (*Id.*). Finally, a "determination of when matters are truly *de minimis* naturally will turn on the assessment of particular circumstances, and the agency will bear the burden of making the required showing." (*Id.*).

Many states and tribes have adopted such *de minimis* provisions with EPA approval. Such provisions have ranged from simple to complex, may involve qualitative or quantitative measures or both, and may change for different categories of pollutants. *De minimis* provisions may allow states and tribes to assign a greater proportion of available staff resources to high priority reviews which are likely to yield the greatest environmental benefits. In other words, *de minimis* provisions may allow states and tribes to more effectively review those proposed activities that pose the greatest threats to ambient water quality conditions, and thereby better maintain and protect high quality waters.

The EPA has addressed the subject of *de minimis* exceptions. In 1993, the EPA Region 8 issued comprehensive antidegradation guidance that addressed a variety of key implementation issues including adoption of *de minimis* provisions[15]. In 2005, EPA issued a national policy memorandum[16] that provided additional recommendations regarding significance thresholds[17] and lowering of water quality in high quality waters. Both of these EPA guidance documents

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1 U.S. Environmental Protection Agency Region VIII Guidance: Antidegradation Implementation. August 1993. http://www.epa.gov/region8/water/wqs/wqsdocs.html.

2 U.S. Environmental Protection Agency memorandum dated August 10, 2005 from Ephraim S. King, Office of Science and Technology, to Water Management Division Directors, Regions 1-10.

17 A significance threshold establishes when proposed degradation will be more than *de minimis* and triggers a full Tier II review.

generally recommended adoption of appropriate *de minimis* provisions that are consistent with the goal of maintaining and protecting high quality waters. The 2005 EPA memorandum noted that:

> *. . . it is important that states and tribes set their significance thresholds at a level that can be demonstrated to be consistent with the purpose of tier 2 antidegradation requirements. Otherwise, a new or increased discharge may result in significant degradation that will not be subject to antidegradation review, and decisions about lowering of water quality in high quality waters may be made without public consideration of necessity and importance, resulting in the loss or diminishment of a valuable natural resource.*

The 2005 EPA memorandum also recommended that states and tribes adopt *de minimis* provisions that consider cumulative loss of water quality:

> *To address situations where there are multiple or repeated increases in discharges, OST recommends that states and tribes incorporate a cumulative cap on the use of total assimilative capacity (i.e., the baseline assimilative capacity of a waterbody established at a specified point in time). This approach creates a backstop so that multiple or repeated discharges to a waterbody over time do not result in the majority of the total assimilative capacity being used without a single antidegradation review. For instance, the state or tribe may choose to subject <u>any</u> lowering of water quality to antidegradation review after a certain percentage of the total assimilative capacity has been used. This ensures that where the ambient water quality is lowered closer to the criteria levels, the state or tribe will conduct an antidegradation review after a certain point to evaluate the necessity and importance of <u>each</u> lowering, regardless of the amount of assimilative capacity that would be used.*

In addition, the *de minimis* issue was considered at length in developing the water quality guidance and requirements for the Great Lakes[18]. Relying on input offered during the four year public process involving environmental groups, industry representatives, and other experts, the directors of the eight Great Lakes states and the EPA technical experts reached a consensus on a significance threshold value of ten percent of the available assimilative capacity, coupled with a cumulative cap. They determined that this threshold represented a reasonable balance between the need to limit the number of detailed antidegradation reviews and the need to maintain and protect high quality waters. They reached a consensus that any individual decision resulting in less than a ten percent loss of assimilative capacity represents minimal risk to the receiving water, and exempting such proposals from antidegradation review is fully consistent with the objectives and goals of the Clean Water Act.

A decision by the Sixth Circuit Court of Appeals provides federal court direction regarding the EPA approval of a state's water quality *de minimis* exception. (<u>Kentucky Waterways Alliance v. Johnson</u>, 540 F.3d 466 (6th Cir. 2008)). The court's decision appears to narrow somewhat the EPA's and states' discretion in determining what constitutes "degradation" for purposes of Tier 2

[18] Final Water Quality Guidance for the Great Lakes Systems. Federal Register: March 23, 1995 (Volume 60, Number 56). http://www.epa.gov/EPA-WATER/1995/March/Day-23/pr-82DIR/pr-82.html

analysis and requires a more complete justification by the EPA and the State why any exemptions from Tier 2 review will not result in degradation.

The Sixth Circuit Court of Appeals addressed the five insignificant or *de minimis* categorical exemptions from Tier 2 review adopted by Kentucky and approved by the EPA. The court reversed the district court's decision, holding that the EPA's antidegradation regulation "regulates degradation, not individual sources of degradation", and that "the legally relevant inquiry is whether Kentucky's Tier 2 review exemptions together permit significant degradation." (*Id* at 492). The court found that the EPA's approval document, while containing detailed technical analyses, failed to analyze this key question. In addition, the court stated that the EPA's approval must include the measurements resulting from the *de minimis* exemptions, i.e., the EPA's estimate as to how much assimilative capacity would be lost due to each exemption's impact.

Finally, in *Ohio Valley Environmental Coalition. v. Horinko*, 279 F. Supp. 2d 732, 769-770 (S.D. W.Va. 2003), a federal district court held that the EPA's approval of a *de minimus* cap of up to ten percent of available assimilative capacity for a specific pollutant was reasonable. The court also held, however, that the EPA's approval of a twenty percent cumulative cap was arbitrary and capricious because there was no evidence cited in the record to explain that, under such a cumulative cap, any degradation to water quality would truly be *de minimis*. *(Ohio Valley Envtl. Coal.*, 279 F. Supp. 2d at 770-771.)

Rationale for the EPA's Disapproval

Minimal degradation is defined in the Missouri Antidegradation Rule and Implementation Procedure (May 7, 2008) document (hereinafter referred to as the implementation procedures) glossary (page 6) as follows:

> *Minimal Degradation: The reduction of the facility assimilative capacity for any pollutant by less than 10 percent as a result of any single discharge and the reduction of the segment assimilative capacity for any pollutant by less than 20 percent as a result of all discharges combined after existing water quality was determined. Events or activities causing minimal degradation are not required to undergo a Tier 2 review.*

The EPA understands "minimal degradation" to be defined in Missouri's implementation procedures to exempt an event or activity from a Tier 2 antidegradation review when:

(1) less than a ten percent (10%) reduction of a water body segment's assimilative capacity as a result of any single discharge is proposed, and,
(2) less than a twenty percent (20%) cumulative reduction of a water body segment's assimilative capacity is proposed.

Section II (page 15) of the implementation procedures document outlines the procedure for determining whether or not degradation is allowed in waters of the state from regulated discharges and states:

Antidegradation reviews are required when proposed new or expanded discharges will significantly degrade water quality.

Significant degradation is defined in the implementation procedures glossary on page 8 as:

Significant Degradation: A reduction by 10 percent or more of the facility assimilative capacity for any pollutant as a result of any single discharge, or the reduction of the segment assimilative capacity for any pollutant by 20 percent or more as a result of all discharges combined (See cumulative degradation) after existing water quality (EWQ) was determined. Events or activities causing significant degradation are required to undergo a Tier 2 review.

Section II.A specifies that to determine the required scope of an antidegradation review, MDNR shall:

First determine whether or not the proposed new or expanded discharge will result in a significant degradation for a POC (pollutant of concern).

This section (pages 15-16) further describes that the activity shall be considered not to result in significant degradation, if:

The proposed net increase in the discharge of a POC does not result in an increase in the ambient water quality concentration of the receiving water after mixing…

and,

The reduction of the facility assimilative capacity (FAC) for [a] pollutant by less than 10 percent as a result of any single discharge and the reduction of the segment assimilative capacity (SAC) for any pollutant by less than 20 percent as a result of all discharges combined after EWQ was determined;

SectionII.A.3 (page 22) describes determining event-specific and cumulative degradation as:

Degradation of a water's assimilative capacity may be allowed if it is considered minimal degradation or if it is justified in accordance with an antidegradation review performed in accordance with this document. The assimilative capacity represents the amount of contamination load that can be discharged to a specific water body without exceeding the WQS applicable to the POC. Degradation is considered minimal if the new or proposed loading (i.e., event-specific) is less than 10 percent of the facility assimilative capacity (FAC) and the cumulative degradation is less than 20 percent of the segment assimilative capacity (SAC).

It is further explained in this section (page 23) that if the cumulative net increase in loadings for a water segment is 20 percent or more of the segment assimilative capacity, then a Tier 2 review is required.

The EPA has accepted a range of approaches to defining a significance threshold over which a full Tier 2 antidegradation review is required; a 10 percent value for a single discharge, as noted above is within the range of values for significance thresholds that EPA has approved in other states. However, any *de minimis* exemption from Tier 2 antidegradation requirements should be subject to a cumulative cap so that individual discharges allowed as *de minimis* do not result in a significant cumulative impact. Missouri's submission of the implementation procedures did not provide evidence that 20 percent of assimilative capacity is *de minimus*. Although the EPA has previously approved adoption of State provisions to exempt proposed activities from antidegradation review where the proposed water quality changes are not significant (i.e., *de minimis*), EPA is disapproving Missouri's implementation procedures because the procedures lack appropriate technical justification for the 20 percent cumulative cap.

Options for Resolving the Disapproval

The EPA has concluded that Missouri's new implementation procedures are deficient with respect to how it applies to projected water quality changes resulting from proposed activities on a cumulative basis. Together with the 10 percent value for a single discharge, the EPA would support Missouri's adoption of a 10 percent assimilative capacity cumulative cap in Missouri's implementation procedures with appropriate justification; the EPA would also support no *de minimus* provision in Missouri's implementation procedures. The EPA remains available to Missouri in assisting to revise its antidegradation implementation procedures appropriately.

SECTION 4 – DECISION ON NUTRIENT CRITERIA

4.A. Approved – 10 CSR 20-7.031 (4) Specific Criteria (N) Nutrients (3), Table M

As part of the 2009 submittal, Missouri included the establishment of site specific numeric nutrient criteria for lakes and reservoirs that exhibit trophic characteristics that are fully supportive of aquatic life. EPA evaluated available data for these lakes (found in Table M) and concurs with the state's conclusion that the site specific criteria found in Table M (which represent the geometric mean values for total phosphorous, total nitrogen, and chlorophyll) are supportive of aquatic life uses at these lakes.

These twenty-five lakes, identified in Table 13, represent lakes with the lowest TP, TN, and Chlorophyll concentrations in the State (within their particular ecoregions) and are located in the lowest 25^{th} percentile (i.e., best) of all lakes with respect to their levels of nutrient contamination. Accordingly, as provided in EPA's guidance for development of nutrient criteria for lakes (and visually depicted in Figure 6.1 of the guidance) these lakes can be used in establishing reference condition, with the understanding that resulting nutrient values are

protective of aquatic life.[19] Additionally, the TP, TN, and Chlorophyll values presented in Table M are consistent with the Regional Ambient Water Quality Benchmarks for protection of aquatic life use in Region 7 as developed by the Regional Technical Advisory Group (RTAG)[20] as well as Ambient Water Quality Criteria Recommendations for Lakes in Nutrient Ecoregion VI[21] , Ecoregion IX[22], and Ecoregion XI[23].

Therefore, EPA concludes that the site specific criteria in Table M are consistent with the CWA and its implementing regulations at 131.11(a) as being protective of the designated use and based on a sound scientific rationale. EPA accordingly approves Table M of 10 CSR 20-7.031., and only the first sentence of 10 CSR 20-7.031 (4) (N) (3), striking "*s*" at the end of the word Table as well as "*and N*" so the sentence reads:

(1) *Nutrient criteria for lakes and reservoirs with site-specific criteria are listed in Table M.*

4.B. Disapproved – 10 CSR 20-7.031 (3)(N) Nutrients and Chlorophyll (except as noted in Sections 4.A., above)

Based upon its review, EPA does not believe the state has submitted nutrient criteria for lakes and reservoirs consistent with the requirements of the Clean Water Act in 40 CFR §131.11, with the exception noted above in Section 4.A. In reaching this conclusion, EPA relied upon the rule language found within 10 CSR 20-7.031(3)(N), the document cited as the technical basis for the numeric nutrient criteria or the Rationale, and the Responses from the state to EPA's initial comments submitted to the state during the public comment period as found in Volume 34, No. 18 of the Missouri Register.

Section 303(c)(2)(A) requires that states adopt "water quality criteria for such waters based upon such [designated] uses." EPA's regulations at 40 CFR § 131.11(a)(1) require that "[s]tates must adopt those water quality criteria to protect the designated use. Such criteria must be based on sound scientific rationale." The approach used to derive the criteria documented in the Rationale is not based on a sound scientific rationale because it does not include the data and other necessary information to allow others to independently reproduce the work. EPA attempted several times to replicate the analyses performed by the state and could not arrive at the same equations, values, and ultimately the same conclusions. For this reason, EPA cannot determine that the approach and resulting criteria are based on a sound scientific rationale as required by EPA's regulations.

In addition, numeric nutrient criteria found at 10 CSR 20-7.031 (3)(N) and as described in the Rationale (with the exception of values noted above in Section 4.A.) fail to demonstrate

[19] USEPA. 2000a. Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs. Office of Water, Office of Science and Technology. Washington, DC. USEPA-822-B00-001
[20] http://www.cpcb.ku.edu/progwg/html/assets/nutrientwg/Lake_RTAG_2011Jun.pdf
[21] USEPA. 2000c. Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Lakes and Reservoirs in Nutrient Ecoregion VI, EPA 822-B-00-008.
[22] USEPA. 2000e. Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Lakes and Reservoirs in Nutrient Ecoregion IX, EPA 822-B-00-011.
[23] USEPA. 2000f. Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State andTribal Nutrient Criteria, Lakes and Reservoirs in Nutrient Ecoregion XI, EPA 822-B-012-008.

that the values or approaches to numeric nutrient criteria will protect the designated aquatic life or recreational uses. In addition, the Rationale put forth by the state is silent with respect to the fundamental requirements of the Clean Water Act which require that water quality criteria to protect designated uses. Under current Missouri Law, lakes in Missouri (with the exception of three that receive a cold water designation) are afforded the following designated aquatic life use:

> *"General Warm-Water fishery -Level of protection assigned to waters in which naturally occurring water quality and/or habitat conditions allow year around maintenance of a diverse warm-water biota, including naturally reproducing populations of recreationally important fish species."*

The Rationale put forth does not provide any information, data, or studies to indicate that the established criteria will, "allow year around maintenance of a diverse warm-water biota," and therefore it cannot be demonstrated to ultimately protect the designated uses for lakes within the state as required by the CWA and its implementing regulations.

The state must revise the criteria to clearly indicate which designated uses the criteria is intended to protect as well as supporting documentation to indicate that the criteria in fact will fully support the associated use. Additionally, supporting documentation needs to include the raw data and resulting statistical analyses so that the EPA may evaluate the soundness of the scientific rationale and protectiveness of the criteria pursuant to the requirement found at 40 CFR § 131.11(a)(1). At minimum, it is important that the revised criteria also take into account the following:

- When using a reference approach or least-disturbed approach, reference water bodies should not be impaired by anthropogenic nutrient pollution and the selection process for reference waters should not exclude high quality lakes based solely on a particular landcover class, especially where other landcover classes may be more representative of minimal human disturbance.
- If using a modeling approach to develop TP, the approach must result in criteria that are supportive of the designated use. Accordingly such an approach should use data from waters that support the use such as reference/least-disturbed lakes (or alternatively a lower percentile i.e., $<25^{th}$ percentile of the full population), the number of lakes (n) for each ecoregion should be sufficient to establish a robust relationship, and the resulting relationship should be shown to predict lake TP concentrations with sufficient accuracy to inform criteria derivation. If these conditions are not met, the approach may not be scientifically defensible.
- Chlorophyll and TN concentrations in reference/least-disturbed lakes should be evaluated to inform criteria derivation. Statistical relationships between TP and Chlorophyll, TP and TN, and TN and Chlorophyll can also be estimated and used to translate chlorophyll criteria to corresponding TN and TP criteria. These multiple lines of evidence can then be used to develop a more robust and scientific rationale, rather than relying on a single relationship.

The Agency would also support the state if they chose to modify their criteria beyond the original framework established within their Rationale, and offers assistance to develop such additional lines of evidence and analyses to provide additional scientific support.

Accordingly, the EPA disapproves 10 CSR 20-7.031 (3)(N) Nutrients and Chlorophyll (except as noted in Sections 4.A., above) of Missouri's WQS because the methods used and analyses conducted to develop the lake nutrient criteria are not based on a sound scientific rationale as they do not include the data and other necessary information to allow others to independently reproduce the work; it also fails to demonstrate that the values or approaches to numeric nutrient criteria will protect the designated aquatic life or recreational uses per 40 CFR §§131.6(b) and (c).

SECTION 5 – OTHER ITEMS EPA IS DISAPPROVING

5.A. Disapproved – Removal of Irrigation Use on the Mississippi River (WBID 1707.03)

In resegmenting the Mississippi River, MDNR withheld the Irrigation use for one portion of the newly resegmented Mississippi River. Previously, this portion of the River was designated for irrigation purposes. While federal regulations do not require a UAA when a state decides to remove a non-101(a)(2) use, they do require that states provide to the EPA the methods used and analyses conducted to support water quality standards revisions. See 40 CFR §131.6(b). Missouri did not provide any rationale or scientific justification for the removal of this use nor did it demonstrate that the use was not an existing use. See 40 CFR §131.3(e). As such, the EPA disapproves the removal of the Irrigation use from the Mississippi River (WBID 1707.03). Missouri can remedy this decision by re-designating the use or by providing sufficient justification to support its decision.

5.B. Disapproved – East Fork Locust Creek and Little East Fork Locust Creek Site-Specific Dissolved Oxygen Criteria

Missouri's revised WQS included site-specific dissolved oxygen criteria for segments of East Fork Locust Creek and Little East Fork Locust Creek, as described in Table K of 10 CSR 20-7.031 of the state's regulations. The site-specific criteria are to be applicable from July 1 to September 30 during baseflow conditions. The criteria specify that the DO shall not fall below a daily average of 3.6 mg/L or the daily minimum of 0.9 mg/L. The daily minimum is to be measured as the average of three samples collected over a six-hour period.

MEC Water Resources conducted a study resulting in the proposed site-specific DO criteria, *Proposed Site-Specific Criteria for East Fork Locust Creek*.[24] The study examined the water quality conditions of several streams selected as "reference conditions." The purpose of these evaluations was to determine the level of DO that supports the aquatic community expected to be present in East Fork Locust Creek and Little East Fork Locust Creek. MEC explained in a November, 17, 2006, memorandum to Robert Brundage (Newman, Comley, and Ruth) that the

[24] MEC Water Resources. 2006. Proposed Site-Specific Dissolved Oxygen Criteria for East Fork Locust Creek. Prepared for the City of Milan, Missouri and Premium Standard Farms. Transmitted via email from Chris Zell to EPA on October 4, 2006.

"proposed criteria are presumed to be derived from natural or minimally-disturbed concentration data. It is reasonable to infer that if reference conditions have been appropriately selected, that evolutionary histories of resident species include adaptation to exposure regimes represented by observed concentration data."

EPA's regulations at 40 CFR § 131.11 require states to adopt water quality criteria that protects the designated use and is based on a sound scientific rationale. In addition, EPA's regulations allow states to establish numeric criteria based on 304(a) Guidance modified to reflect site-specific conditions. EPA's 1986 DO criteria recommendations, published pursuant to section 304(a) of the CWA, state that alternative criteria may be appropriate "where natural conditions alone" create the DO concentrations. It goes on to say that "absolutely no anthropogenic dissolved oxygen depression in the potentially lethal area below the 1-day minima should be allowed unless special care is taken to ascertain the tolerance of resident species to low dissolved oxygen."

The EPA has several concerns with the approach used to develop the site specific DO criteria for East Fork and Little East Fork Creek. First, the sites selected as reference do not represent a situation "where natural conditions alone" result in lower DO. While the process employed by MEC may have resulted in selecting streams in the region that are "best available", those sites are still highly impacted by anthropogenic sources of pollutants and are not an appropriate representation of "natural conditions". The land use is one primarily composed of row crop agriculture. Pictures presented by the Missouri Department of Conservation show row crop agriculture occurring directly adjacent to the study sites. Runoff from these areas could include elevated levels of nutrients, sediment, or other oxygen demanding compounds that impact the instream DO concentration. The study did not evaluate or quantify the potential impacts of these anthropogenic influences on the instream water quality. The EPA does not believe that the reference conditions selected for this study are appropriate for determining the alternate criteria for protecting aquatic life in East Fork Locust Creek and Little East Fork Locust Creek.

Second, the daily minimum proposed by the site-specific criteria calculated as a six-hour average could result in DO concentrations reaching 0.0 mg/L. The research upon which EPA's 1986 criteria recommendations were derived demonstrates that depressed DO concentrations have harmful effects on the behavior, reproduction, and survival of sensitive species. The criteria document explains that "any dissolved oxygen criteria should include absolute minima to prevent mortality due to the direct effects of hypoxia, but such minima alone may not be sufficient protection for the long-term persistence of sensitive populations under natural conditions. Therefore, the criteria minimum must also provide reasonable assurance that regularly repeated or prolonged exposure for days or weeks at the allowable minimum will avoid significant physiological stress of sensitive organism." The East Fork Locust Creek and Little East Fork Locust Creek study did not sufficiently demonstrate that sensitive aquatic species are tolerant of lower DO values. The site specific DO criteria is a daily average of 3.6 mg/L coupled with a daily minimum of 0.9 mg/L (calculated as a running 6 hour average anytime during 24 hours) for the entire classified length of the East Fork Locust Creek (29.6 miles) and Little East Fork Locust Creek (9 miles).This means that in a 24-hour period there could be episodes of anoxic conditions and zero DO available to the aquatic life living in 38.6 stream miles due to elevated levels of BOD, TSS, and elevated phosphorous levels according to phosphorous data collected

by Missouri Department of Conservation and MDNR from point (WWTF) and non-point sources (agriculture practices). Establishing criteria that could result in DO concentrations reaching 0.0 mg/L on a daily basis does not prevent the regularly repeated scenarios that could inhibit the propagation of sensitive species. As such, the EPA does not believe the criteria are protective of the aquatic life designated use.

Based upon its review, the EPA does not believe the study adequately demonstrated that aquatic life designated use would be protected by the extremely low levels of DO proposed by the site-specific criteria. Accordingly, EPA disapproves the site-specific criteria for East Fork Locust Creek and Little East Fork Locust Creek in Table K of Missouri's WQS because the methods used and analyses conducted to develop the site specific DO criteria do not support the aquatic life designated use per 40 CFR §§131.6(b) and (c). Missouri can remedy this disapproval by submitting methods used and analyses conducted to develop site specific DO criteria that will support the aquatic life use designation in East Fork Locust Creek and Little East Fork Locust Creek.

5.C. Disapproved – Removal of Drinking Water Supply Use on Prairie Home C.A. Lakes (WBID 7444)

Revisions to 10 CSR 20-7.031 Table G resulted in the deletion of the drinking water supply designated use for the Prairie Home C.A. Lakes. Federal regulations at 40 CFR § 131.10 include the specification that States "*must take into consideration the use and value of water for public water supplies*" when classifying waters of the State. Missouri's submission did not provide information that these lakes were ever used as a public water supply, nor did it provide information as to whether or not public water supply facilities currently exist on these lakes.

While federal regulations do not require a UAA when a state decides to remove a non-101(a)(2) use, they do require that states provide to the EPA the methods used and analyses conducted to support water quality standards revisions. See 40 CFR §131.6(b). Missouri did not provide any rationale or scientific justification for the removal of this use nor did it demonstrate the use was not an existing use. See 40 CFR §131(3)(e). As such, EPA disapproves the removal of the drinking water supply use from Prairie Home C.A. Lakes (WBID 7444). Missouri can remedy this decision by re-designating the use or by providing sufficient justification to support its decision.

SECTION 6 – OTHER ITEMS ON WHICH EPA IS TAKING NO ACTION

6.A. Nonsubstantive Changes to 10 CSR 20-7.031

Section 303(c) of CWA requires the EPA to review and approve revisions to states' WQS. Numerous revisions Missouri made to its WQS regulations (10 CSR 20-7.031) do not constitute new or revised WQS. As such, EPA is not required under section 303(c) of CWA to review and approve such changes, outlined below. The provisions listed below were additions or changes to Missouri's regulations, but do not constitute new or revised WQS requiring the EPA review because some of the changes correct grammatical errors, update references, or provide clarity. The EPA notes the appropriateness of these changes in 10 CSR 20-7.031; however, these changes do not constitute new or revised WQS requiring EPA review and approval. Therefore,

the EPA is taking no action on any of the items detailed in the tables below. Table 14 identifies Missouri's changes to the text of the water quality standards regulations. Table 15 lists the revisions Missouri made to stream names in Table H. Table 16 lists the revisions Missouri made to lake names in Table G.

The EPA notes that in one case, the revisions to the names of two Tributaries to Missouri River (WBID 0799 and 0800) resulted in the downstream Class P segment (WBID 0799) erroneously identified as a tributary to the upstream Class C segment (WBID 0800). While the naming error does not affect the level of protection afforded to these classified waters, it could result in confusion as to which segment is downstream. EPA notes this error (Table 17) for MDNR to correct during the next triennial review.

Table 17. Error in revisions to names for Missouri to correct during the next triennial review.

Water Body ID	Old Water Body Name	New Water Body Name	Class	County Downstream	HUC 8
0800	Trib. to Missouri R.	Maupin Br.	C	Moniteau	10300102
0799	Trib. to Missouri R.	Trib. to Maupin Br.	P	Moniteau	10300102

Missouri also revised Table G – Lake Classifications and Use Designations, and Table H – Stream Classifications and Use Designations, to correct earlier methods of delineating lake acreages, and, start and endpoints of segment legal descriptions, respectively. These corrections were the result of a more precise method to map these features using geographic information system-based mapping technologies and provide clarity in identifying the extent of lake acreage and classified streams in the state. More accurate representation of the classified waters of the state ensures the appropriate application of Missouri's WQS.

Table 4. Water bodies in Table H Missouri resegmented and EPA approves.

Water Body ID	Water Body	Class	Miles	From	To	County	County2	WBC	SCR	Explanation	EPA Decision
~~2323~~	~~Big Cr.~~	~~P~~	~~7.0~~	~~Mouth~~	~~21,31N,7E~~	~~Wayne~~	~~Madison~~	~~A~~		Big Cr. resegmented and upper portion renamed E. Fk. Big Cr. Extent of classification is unchanged.	Approved
2323	Big Cr.	P	6.1	Mouth	29,31N,7E	Wayne	Madison	A			
3823	E. Fk. Big Cr.	P	1.4	29,31N,7E	21,31N,7E	Madison		A			
~~2480~~	~~Caney Cr.~~	~~C~~	~~4.0~~	~~Mouth~~	~~12,24N,17W~~	~~Taney~~		~~A~~		Caney Cr. resegmented and upper portion renamed Trib. to Caney Cr. Extent of classification is unchanged. Confirmed with GIS.	Approved
2480	Caney Cr.	C	3.0	Mouth	11,24N,17W	Taney		A			
3824	Trib. to Caney Cr.	C	1.9	Mouth	12,24N,17W	Taney		A			
~~3168~~	~~Douger Br.~~	~~C~~	~~4.5~~	~~Mouth~~	~~7,26N,25W~~	~~Lawrence~~		~~B~~		Douger Br. resegmented and upper portion renamed Chat Cr. Extent of classification is unchanged. WBC-B removed on WBID 3810.	Resegmentation approved. Removal of WBC-B recreational use a separate action. See section 2 of decision document.
3810	Douger Br.	C	3.1	Mouth	11,26N,26W	Lawrence					
3168	Chat Cr.	C	2.1	11,26N,26W	7,26N,25W	Lawrence		B	X		
~~0608~~	~~E. Fk. Locust Cr.~~	~~P~~	~~13.0~~	~~Mouth~~	~~23,62N,20W~~	~~Sullivan~~		~~B~~		Two segments combined into one. Extent of classification is unchanged. WBC-B designated for entire segment.	Approved
~~3706~~	~~E. Fk. Locust Cr.~~	~~P~~	~~3.6~~	~~23,62N,20W~~	~~Hwy. 6~~	~~Sullivan~~					
0608	E. Fk. Locust Cr.	P	16.7	Mouth	2,62N,20W	Sullivan		B			
~~0883~~	~~Gabriel Cr.~~	~~C~~	~~11.1~~	~~24,44N,19W~~	~~03,42N,19W~~	~~Morgan~~				Two segments combined into one. Extent of classification is unchanged. WBC-B and SCR designated for entire segment.	Approved
~~3705~~	~~Gabriel Cr.~~	~~C~~	~~1.9~~	~~07,44N,18W~~	~~24,44N,19W~~	~~Morgan~~		~~B~~			
0883	Gabriel Cr.	C	13.6	07,44N,18W	03,42N,19W	Morgan		B	X		
~~0431~~	~~Lake Cr.~~	~~C~~	~~9.5~~	~~Mouth~~	~~29,58N,25W~~	~~Livingston~~		~~B~~		Lake Creek is two separate creeks. The resegmentation corrects the classification error. MDNR provided GIS maps to confirm.	Approved
0431	Lake Cr.	C	3.3	Mouth	29,58N,25W	Livingston		B			
3820	Lake Cr.	C	6.6	Mouth	34,58N,25W	Livingston		B			
~~2774~~	~~Lake Slough~~	~~C~~	~~13.0~~	~~3,23N,7E~~	~~1,25N,7E~~	~~Butler~~		~~B~~		Lake Slough resegmented and upper portion renamed Ditch #11. Endpoints between Lake Slough and Ditch #11 do not coincide. MDNR confirmed typographical error and intention to correct.	Resegmentation approved, but EPA notes typographical error for MDNR's attention during the next triennial review.
2774	Lake Slough	C	9.3	3,23N,7E	31,25N,8E	Butler		B			
3812	Ditch #11	C	3.0	7,24N,8E	1,25N,7E	Butler		B			
~~0041~~	~~Linn Cr.~~	~~C~~	~~3.0~~	~~Mouth~~	~~36,66N,9W~~	~~Clark~~		~~B~~		Linn Cr. resegmented and upper portion renamed N. Linn. Cr. Extent of classification is unchanged. Confirmed with GIS.	Approved
0041	Linn Cr.	C	2.3	Mouth	31,66N,8W	Clark		B			
3817	N. Linn Cr.	C	1.7	Mouth	36,66N,9W	Clark		B			
~~0495~~	~~Lost Cr.~~	~~C~~	~~22.0~~	~~Mouth~~	~~36,61N,32N~~	~~DeKalb~~	~~Gentry~~	~~B~~		Lost Cr. resegmented to account for presence of King Lake. Extent of classification is unchanged. Confirmed with GIS.	Approved
0495	Lost Cr.	C	25.2	Mouth	King Lake	DeKalb		B			
3816	Lost Cr.	C	1.8	Mouth	36,61N,32N	DeKalb	Gentry	B			
~~1709~~	~~Maline Cr.~~	~~C~~	~~1.0~~	~~Mouth~~	~~Bellefontaine Rd.~~	~~St. Louis City~~	~~St. Louis~~			Maline Cr. resegmented into two segments. Extent of classification is unchanged. Confirmed with GIS. WBC-B designated for WBID 1709.	Resegmentation approved. Action on recreational use designations a separate action. See section 2 of decision document.
3839	Maline Cr.	C	0.5	Mouth	Sur 3125,46N,7E	St. Louis City			X		
1709	Maline Cr.	C	0.6	Sur 3125,46N,7E	9,46N,7E	St. Louis City	St. Louis	B	X		
~~2771~~	~~Menorkenut Slough~~	~~C~~	~~25.0~~	~~Mouth~~	~~7,25N,8E~~	~~Butler~~		~~B~~		Menorkenut Slough resegmented and upper portion renamed Ditch #16. Extent of classification is unchanged.	Resegmentation approved. Removal of WBC-B recreational use a separate action. See section 2 of decision document.
2771	Menorkenut Slough	C	10.4	Mouth	33,24N,8E	Butler					
3813	Ditch #16	C	11.2	33,24N,8E	7,25N,8E	Butler					
~~0001~~	~~Mississippi River~~	~~P~~	~~165.0~~	~~Missouri R.~~	~~Des Moines R.~~	~~St. Charles~~	~~Clark~~	~~A~~	~~X~~	Mississippi R. resegmented. Extent of classification is unchanged.	Approved
3700	Mississippi River	P	44.1	Missouri R.	Cuivre R.	St. Charles		A	X		
3699	Mississippi River	P	94.4	Cuivre R.	Lock and Dam 21	St. Charles	Marion	A	X		
0001	Mississippi River	P	37.5	Lock & Dam 21	Des Moines R.	Marion	Clark	A	X		

Water Body ID	Water Body	Class	Miles	From	To	County	County2	WBC	SCR	Explanation	EPA Decision
~~1707.02~~	~~Mississippi R.~~	~~P~~	~~195.5~~	~~Ohio R.~~	~~Dam #27~~	~~Mississippi~~	~~St. Louis City~~		~~X~~	Two segments of the Mississippi River resegmented into a total of four segments. Extent of classification is unchanged. WBC-B designated for all segments except WBID 1707.02, which is subject to EPA's October 29, 2009 determination.	Resegmentation approved. For EPA action on recreational use designations, section 2 of decision document.
~~1707.01~~	~~Mississippi R.~~	~~P~~	~~5.0~~	~~Dam #27~~	~~Missouri R.~~	~~Mississippi~~	~~St. Louis City~~	~~B~~	~~X~~		
3701	Mississippi R.	P	120.1	Ohio R.	Kaskaskia R.	Mississippi	Ste. Genevieve	B	X		
1707.03	Mississippi R.	P	44.6	Kaskaskia R.	Meramec R.	Ste. Genevieve	St. Louis	B	X		
1707.02	Mississippi R.	P	28.3	Meramec R.	N Riverfront Park	St. Louis	St. Louis City		X		
1707.01	Mississippi R.	P	6.3	N Riverfront Park	Missouri R.	St. Louis City	St. Charles	B	X		
~~0369~~	~~Moss Cr.~~	~~P~~	~~23.0~~	~~Mouth~~	~~7,50N,25W~~	~~Carroll~~		~~B~~		Moss Creek resegmented into 13.7-mile segment and 5.1-mile Norborne Drainage Ditch. Upstream boundary of Ditch does not coincide with old upstream boundary of Moss Cr. MDNR explained that the old upstream boundary was an error. The upstream legal description for Norborne Drainage Ditch corrects the error.	Approved
0369	Moss Cr.	P	13.7	Mouth	34,52N,25W	Carroll		B			
3814	Norborne Drainage Ditch	P	5.1	34,52N,25W	21,52N,26W	Carroll	Ray	B			
~~0065~~	~~N. Fk. M. Fabius R.~~	~~C~~	~~9.2~~	~~22,64N,12W~~	~~36,65N,13W~~	~~Scotland~~	~~Schuyler~~	~~B~~		Two segments of N. Fk. M. Fabius River combined into one segment. Extent of classification is unchanged. Confirmed with GIS. WBC-B designated for entire segment.	Approved
~~3702~~	~~N. Fk. M. Fabius R.~~	~~C~~	~~16.2~~	~~36,65N,13W~~	~~21,66N,14W~~	~~Scotland~~	~~Schuyler~~				
0065	N. Fk. M. Fabius R.	C	28.2	Mouth	21,66N,14W	Scotland	Schuyler	B			
~~1444~~	~~Piper Cr.~~	~~P~~	~~7.5~~	~~Mouth~~	~~Hwy. 83~~	~~Polk~~		~~B~~		Piper Cr. resegmented into 5.3-mile Piper Cr. and 2.5-mile Town Br. Confirmed with GIS.	Approved
1444	Piper Cr.	P	5.3	Mouth	31,34N,22W	Polk		B			
3822	Town Br.	P	2.5	Mouth	12,33N,23W	Polk		B			
~~1648~~	~~Quick Cr.~~	~~C~~	~~4.5~~	~~28,46N,5W~~	~~25,46N,6W~~	~~Montgomery~~				Quick Cr. resegmented and upper portion renamed Modoc Cr. Extent of classification is unchanged. Confirmed with GIS. WBC-B designated for WBID 1647 and 1648.	Resegmentation approved. For EPA action on recreational uses see section 2 of decision document.
1648	Quick Cr.	C	2.0	Sur 2658,46N,5W	32,46N,5W	Montgomery		B	X		
~~1647~~	~~Quick Cr.~~	~~P1~~	~~1.5~~	~~28,46N,SW~~	~~Sur 2658, 46N,5W~~	~~Montgomery~~		~~B~~			
1647	Quick Cr.	P1	1.8	Mouth	Sur 2658, 46N,5W	Montgomery		B			
3821	Modoc Cr.	C	3.3	32,46N,4W	25,46N,6W						
~~1710~~	~~River des Peres~~	~~P~~	~~1.5~~	~~Mouth~~	~~Gravois Cr.~~	~~St. Louis City~~				Two segments of River des Peres combined into one Class P segment. MDNR used Classification Protocol and USGS gage data to support re-classification of Class C to Class P.	Resegmentation approved. Action on recreational use designations a separate action. See section 2 of decision document.
~~1711~~	~~River des Peres~~	~~C~~	~~1.0~~	~~Gravois Cr.~~	~~Morgan Ford Road~~	~~St. Louis City~~					
1710	River des Peres	P	2.6	Mouth	Sur 1359,44N,6E	St. Louis City			X		
~~2481~~	~~S. Spring Cr.~~	~~P~~	~~5.0~~	~~Mouth~~	~~23,25N,16W~~	~~Douglas~~		~~B~~		S. Spring Cr. resegmented and lower 1.0 mile renamed Spring Cr. Extent of classification is unchanged.	Approved
2481	S. Spring Cr.	P	4.0	Mouth	23,25N,16W	Douglas		B			
3815	Spring Cr.	P	1.0	Mouth	18,25N,16W	Douglas		B			
~~3134~~	~~Spillway Ditch~~	~~P~~	~~13.5~~	~~29,23N,15E~~	~~33,25N,16E~~	~~New Madrid~~	~~Mississippi~~	~~A~~		Spillway Ditch and Stevenson Bayou resegmented into 2 segments of Spillway Ditch and 1 segment of Stevenson Bayou to correct a naming error. Endpoints between 2 new Spillway Ditch segments do not coincide. MDNR noted typographical error and intent to revise. Extent of classification unchanged.	Resegmentation approved, but EPA notes typographical error for MDNR's attention during the next triennial review.
~~3135~~	~~Stevenson Bayou~~	~~C~~	~~14.0~~	~~33,25N,16E~~	~~31,27N,17E~~	~~Mississippi~~		~~B~~			
3134	Spillway Ditch	P	24.7	28,23N,15E	33,25N,16E	New Madrid	Mississippi	A			
3809	Spillway Ditch	C	8.7	5,24N,16E	25,26N,16E	Mississippi		B			
3135	Stevenson Bayou	C	6.4	25,26N,16E	31,27N,17E	Mississippi		B			
~~1870~~	~~Spring Br.~~	~~P~~	~~4.8~~	~~Mouth~~	~~02,34N,06W~~	~~Dent~~		~~B~~		Two segments of Spring Br. combined into Spring Cr. Extent of classification is unchanged. Confirmed with GIS.	Approved
~~3708~~	~~Spring Br.~~	~~P~~	~~7.4~~	~~02,34N,06W~~	~~Hwy. 32~~	~~Dent~~					
1870	Spring Cr.	P	18.0	Mouth	19,34N,05W	Dent		B	X		

Water Body ID	Water Body	Class	Miles	From	To	County	County2	WBC	SCR	Explanation	EPA Decision
~~3138~~	~~St. Johns Ditch~~	~~P~~	~~35.0~~	~~29,23N,15E~~	~~25,28N,13E~~	~~New Madrid~~	~~Scott~~	~~B~~		St. Johns Ditch resegmented into two segments.	Resegmentation approved. Action on
3138	St. Johns Ditch	P	15.3	Mouth	16,25N,14E	New Madrid		B	X	Upstream boundary (between Class P and other Class C	recreational use designations a separate action.
3707	St. Johns Ditch	P	18.7	16,25N,14E	36,28N,13E	New Madrid	Scott		X	segment) revised from section 25 to 36 to more accurately describe boundary, which is confluence located in section 36.	See section 2 of decision document.
~~0327~~	~~Third Fk. Platte R.~~	~~C~~	~~7.5~~	~~Mouth~~	~~08,57N,33W~~	~~Buchanan~~	~~Gentry~~	~~B~~		Two segments combined into one. Extent of	
~~3704~~	~~Third Fk. Platte R.~~	~~C~~	~~25.0~~	~~08,57N,33W~~	~~25,61N,33W~~	~~Buchanan~~	~~Gentry~~			classification is unchanged. WBC-B and SCR	Approved
0327	Third Fk. Platte R.	C	33.7	Mouth	25,61N,33W	Buchanan	Gentry	B	X	designated for entire segment.	
~~1369~~	~~Turkey Cr.~~	~~C~~	~~15.0~~	~~Mouth~~	~~34,35N,25W~~	~~St. Clair~~	~~Cedar~~	~~A~~		Turkey Cr. resegmented into Turkey Cr. and S. Fk.	
1369	Turkey Cr.	C	15.9	Mouth	21,35N,25W	St. Clair	Cedar	A		Turkey Cr. New segmentation corrects naming error.	Approved
3828	S. Fk. Turkey Cr.	C	4.5	21,35N,25W	34,35N,25W	Cedar		A		Extent of classification is unchanged.	
~~1291~~	~~Wades Cr.~~	~~C~~	~~8.0~~	~~Mouth~~	~~33,44N,25W~~	~~Henry~~		~~B~~		Wades Cr. resegmented into Wade Cr. and Trib. to	
1291	Wade Cr.	C	5.4	Mouth	9,43N,25W	Henry		B		Wade Cr. Extent of classification is unchanged.	Approved
3709	Trib. to Wade Cr.	C	2.0	Mouth	33,44N,25W	Henry		B		Confirmed with GIS.	
~~2375~~	~~Wilson Cr.~~	~~P~~	~~18.0~~	~~Mouth~~	~~16,29N,22W~~	~~Christian~~	~~Greene~~	~~B~~		Wilson Cr. resegmented to correct errors in naming and	
2375	Wilsons Cr.	P	14.0	Mouth	27,29N,22W	Christian	Greene	B		segment descriptions for Wilsons Cr., Fassnight Cr.,	Approved
3811	North Branch Wilsons Cr.	P	3.8	29,29N,22W	16,29N,22W	Greene		B		and Jordan Cr. North Branch Wilsons Cr. added to better identify upper reach of Wilson Cr. Confirmed changes with GIS.	

Table 5. Water bodies Missouri added to Table H.

Water Body ID	Water Body	Class	Miles	From	To	County	County2	LWW	AQL	WBC	SCR	EPA Decision
3825	Black Cr.	P	1.6	Mouth	21,45N,6E	St. Louis		X	X	B	X	Approved
3818	Cave Cr.	C	0.5	Mouth	29.48N,15W	Cooper		X	X	B		Approved
3826	Deer Cr.	P	1.6	Mouth	1930,45N,6	St. Louis City	St. Louis	X	X	B	X	Approved
3827	River des Peres	P	3.7	Sur 1359,44N,6E	2037,45N,6 E	St. Louis City		X	X		X	For EPA action on recreational use designations, section 2 of decision document.

Table 6. Water bodies Missouri deleted from Table H and EPA approves.

Water Body ID	Water Body	Class	Miles	From	To	County	Explanation	EPA Decision
3783	Beaver Dam Cr.	C	5.0	Mouth	02,46N,23W	Pettis	Duplicate of WBID 3548 Beaverdam Cr. Confirmed with GIS and MDNR.	Approved
3727	Big Turkey Cr.	C	14.0	Mouth	5,38N,21W	Benton	Duplicate of WBID 1116 Turkey Cr. Confirmed with GIS.	Approved
3786	Camp Cr.	C	3.5	Mouth	27,45N,22W	Pettis	Duplicate of WBID 866. Confirmed with GIS.	Approved
2819	Ditch to Pike Cr.	C	3.0	Mouth	30,23N,6E	Butler	Duplicate of WBID 2813 Pike Cr. Ditch. Confirmed with GIS and checked with MDNR regarding legal description.	Approved
3749	Jordan Br.	C	1.0	Mouth	11,37N,22W	Hickory	Duplicate of WBID 1431 Jordan Br. Confirmed with GIS.	Approved
3564	Mill Cr.	P	0.5	Mouth	03,37N,10W	Phelps	Duplicate of WBID 3563 Mill Cr. Confirmed with GIS.	Approved
3775	Panther Cr.	C	2.0	Mouth	32,36N,24W	St. Clair	Duplicate of part of WBID 1373 Panther Cr. Confirmed with GIS.	Approved
3747	South Dry Sac Cr.	C	2.0	5,29N,20W	3,29N,20W	Greene	Duplicate of WBID 3746 S. Dry Sac Cr. Endpoints identical.	Approved
3748	South Dry Sac R.	P	1.5	Mouth	36,30N,22W	Greene	Duplicate of WBID 1386 S. Dry Sac R. Endpoints identical.	Approved
3774	Sugar Cr.	P	5.5	Mouth	9,41N,11W	Miller/ Osage	Duplicate of part of WBID 1077 Sugar Cr. Confirmed with GIS.	Approved
3712	Trib. to Bauer Br.	C	1.5	Mouth	28,43N,21W	Benton	Duplicate of WBID 1114. Confirmed with GIS.	Approved
0648	Trib. to Chariton R.	C	1.5	Mouth	33,66N,16W	Putnam	Duplicate of WBID 0649 Old Chan. Chariton R. Confirmed with GIS.	Approved

Table 8. Water bodies Missouri designated and EPA approves for the protection of WBC-B. The table below includes some water body names in brackets. The name in brackets is the old name that Missouri revised during this triennial review. See Table 4 and section 1.G. of the enclosurefor additional discussion.

Water Body ID	Water Body Name	County Downstream	HUC8
0622	Barber Cr.	Sullivan	10280103
0867	Basin Fk.	Pettis	10300103
1276	Big Deer Cr.	Bates	10290108
1608	Bigelow's Cr.	St. Charles	10300200
3147	Blue Ditch	Scott	08020201
0993	Blythes Cr.	Moniteau	10300102
1301	Bones Br.	Bates	10290102
1690	Browns Br. [Trib. to Browns Br.]	Franklin	10300200
0859	Brushy Cr.	Pettis	10300103
1679	Brushy Cr. [Slaughter Br.]	Franklin	10300200
1865	Burgher Br.	Phelps	07140102
2389	Carney Cr.	Barry	11010002
1000	Clark Fk.	Cole	10300102
1631	Clear Cr.	Montgomery	10300200
3303	Cole Camp Cr.	Benton	10290109
0721	Collier Cr.	Callaway	10300102
0132	Coon Cr.	Monroe	07110006
0253	Davis Cr. Ditch	Holt	10240005
0320	Dicks Cr.	Platte	10240012
3094	Ditch #8	New Madrid	08020204
1298	Double Br.	Bates	10290102
1688	Dubois Cr.	Franklin	10300200
0811	E. Brush Cr.	Moniteau	10300102
0608	E. Fk. Locust Cr.*	Sullivan	10280103
1518	E. Fk. Roubidoux Cr.	Texas	10290201
0597	E. Yellow Cr.	Chariton	10280103
0287	Elkhorn Cr.	Nodaway	10240010
0804	Factory Cr.	Moniteau	10300102
0883	Gabriel Cr.*	Morgan	10300103
0807	Haldiman Br.	Moniteau	10300102
0588	Hickory Cr.	Grundy	10280102
1011	Hominy Br. [Hominy Cr.]	Boone	10300102
1002	Honey Cr.	Cole	10300102
3413	Horseshoe Cr.	Jackson	10300101
1591	Indian Cr.	Texas	10290202
1864	L. Dry Fk.	Phelps	07140102
0863	L. Shaver Cr.	Pettis	10300103
0328	L. Third Fk. Platte R.	Dekalb	10240012
2980	Lick Cr. Ditch	Stoddard	08020203
0602	Long Br.	Linn	10280103
1709	Maline Cr.*	St. Louis City	07140101

3617	Mineral Spring Hollow	Texas	10290202
1707.01	Mississippi R.*	St. Louis City	07140101
1707.03	Mississippi R.*	Ste. Genevieve	07140101
3701	Mississippi R.*	Mississippi	07140105
0557	Muddy Cr.	Grundy	10280102
0898	Muddy Cr.	Saline	10300104
0391	Muddy Fk.	Clay	10300101
1010	N. Fk. Grindstone Cr.	Boone	10300102
0065	N. Fk. M. Fabius R.*	Scotland	07110002
1295	Panther Cr.	Bates	10290105
2058	Pleasant Valley Cr.	Crawford	07140103
1647	Quick Cr.*	Montgomery	10300200
1648	Quick Cr.*	Montgomery	10300200
0586	Raccoon Cr.	Grundy	10280102
0520	Rattlesnake Cr.	Livingston	10280101
0715	Richland Cr.	Callaway	10300102
0829	Rising Cr.	Cole	10300102
2035	Roth Cr. [Bachelor Cr.]	Franklin	07140103
1032	Sanford Cr.	Cole	10290111
0860	Sewer Branch	Pettis	10300103
3624	Slabtown Br.	Texas	10290202
3359	Soap Cr.	Gasconade	07140103
1870	Spring Cr. [Spring Br.]*	Dent	07140102
1029	Sugar Br.	Boone	10300102
1030	Sugar Br.	Boone	10300102
0327	Third Fk. Platte R.*	Buchanan	10240012
2130	Three Hill Cr.	St. Francois	07140104
0316	Todd Cr.	Platte	10240012
1687	Trib. to Busch Cr.	Franklin	10300200
0133	Trib. to Coon Cr.	Randolph	07110006
3509	Trib. to Flat Cr.	Pettis	10300103
1694	Trib. to Labadie Cr.	Franklin	10300200
0500	Trib. to W. Fk. Lost Cr.	Dekalb	10280101
2985	Turkey Cr.	Stoddard	08020203
0556	W. Honey Cr. [W. Fk. Honey Cr.]	Grundy	10280102
0319	Wilkerson Cr.	Clay	10240012

* See Section 1.G of this document for additional information on segmentation revisions to this water body.

Table 9. Water body segments and lakes Missouri designated and EPA approves for the protection of SCR. The table below includes some water body names in brackets. The name in brackets is the old name that Missouri revised during this triennial review. See the Table 4 and section 1.G. of the enclsorefor

Stream Segments in Table H:

Water Body ID	Water Body Name	County Downstream	HUC8
1015	Bear Cr.	Boone	10300102
0273	Bee Cr.	Platte	10240011
0207	Big Cr.	Lincoln	07110008
1608	Bigelow's Cr.	St. Charles	10300200
3147	Blue Ditch	Scott	08020201
0993	Blythes Cr.	Moniteau	10300102
0035	Bobs Cr.	Lincoln	07110004
3424	Brawley Cr.	Johnson	10300104
0276	Brush Cr.	Platte	10240011
1475	Brush Cr.	Laclede	10290201
0377	Brushy Cr.	Caldwell	10300101
1679	Brushy Cr. [Slaughter Br.]	Franklin	10300200
1865	Burgher Br.	Phelps	07140102
2392	Calton Cr.	Barry	11010002
2389	Carney Cr.	Barry	11010002
0737	Cedar Cr.	Callaway	10300102
3168	Chat Cr. [Douger Br.]*	Lawrence	11070207
0935	Clear Fk.	Johnson	10300104
3303	Cole Camp Cr.	Benton	10290109
1722	Cotter Cr.	Jefferson	07140101
0912	Davis Cr.	Lafayette	10300104
0320	Dicks Cr.	Platte	10240012
0268	Dillon Cr.	Andrew	10240011
3094	Ditch #8	New Madrid	08020204
2776	Ditch to Black R.	Butler	11010007
1298	Double Br.	Bates	10290102
2041	Dry Fk. Cr.	Gasconade	07140103
3085	Duck Cr.	Stoddard	08020204
1264	E. Br. S. Grand R. [East Br.]	Cass	10290108
0447	E. Fk. Big Cr.	Harrison	10280101
0932	E. Fk. Postoak Cr.	Johnson	10300104
1265	East Cr.	Cass	10290108
0131	Elk Fk. Salt R.	Monroe	07110006
0287	Elkhorn Cr.	Nodaway	10240010
1283	Elm Br.	Henry	10290108
0804	Factory Cr.	Moniteau	10300102
3336	Flat Cr.	Franklin	07140103
0883	Gabriel Cr.*	Morgan	10300103
2823	Goose Cr.	Butler	11010007
3357	Greedy Cr.	Gasconade	07140103
1011	Hominy Br. [Hominy Cr.]	Boone	10300102
1002	Honey Cr.	Cole	10300102

Water Body ID	Water Body Name	County Downstream	HUC8
2202	Hubble Cr.	Cape Girardeau	07140107
3237	Hudson Cr.	Barry	11070207
1591	Indian Cr.	Texas	10290202
0424	L. Blue R.	Jackson	10300101
2385	L. Crane Cr.	Stone	11010002
1863	L. Dry Fk.	Phelps	07140102
0079	L. Fabius R.	Knox	07110003
2393	L. Flat Cr.	Barry	11010002
2231	L. Muddy Cr.	Bollinger	07140107
0863	L. Shaver Cr.	Pettis	10300103
2980	Lick Cr. Ditch	Stoddard	08020203
2457	Little Cr.	Ozark	11010003
0696	Long Branch Cr.	Macon	10280203
1709	Maline Cr.*	St. Louis City	07140101
0245	Middle Tarkio Cr.	Atchison	10240005
0159	Mill Cr.	Lincoln	07110008
1707	Mississippi R.*	St. Louis City	07140101
1707	Mississippi R.*	Ste. Genevieve	07140101
3701	Mississippi R.*	Mississippi	07140105
0343	Mozingo Cr.	Nodaway	10240013
0434	Muddy Cr.	Daviess	10280101
0557	Muddy Cr.	Grundy	10280102
0855	Muddy Cr.	Pettis	10300103
0391	Muddy Fk.	Clay	10300101
1305	Mulberry Cr.	Bates	10290102
0654	N. Blackbird Cr.	Putnam	10280201
0920	N. Fk. Blackwater R.	Johnson	10300104
1010	N. Fk. Grindstone Cr.	Boone	10300102
3188	N. Fk. Spring R.	Jasper	11070207
0083	North R.	Shelby	07110004
1295	Panther Cr.	Bates	10290105
0470	Peddler Cr.	Gentry	10280101
0217	Peruque Cr.	St. Charles	07110009
0218	Peruque Cr.	St. Charles	07110009
0786	Petite Saline Cr.	Cooper	10300102
0926	Pin Oak Cr.	Johnson	10300104
1460	Pointers Cr.	Osage	10290203
0928	Post Oak Cr. [Postoak Cr.]	Johnson	10300104
1849	Pump Hollow	Crawford	07140102
1647	Quick Cr.*	Montgomery	10300200
1648	Quick Cr.*	Montgomery	10300200
0586	Raccoon Cr.	Grundy	10280102
0136	Reese Fk.	Monroe	07110006
0715	Richland Cr.	Callaway	10300102
0829	Rising Cr.	Cole	10300102
0820	Rock Cr.	Cole	10300102
1714	Rock Cr.	Jefferson	07140101
0924	S. Fk. Blackwater R.	Johnson	10300104
3236	S. Fk. Capps Cr.	Barry	11070207

Water Body ID	Water Body Name	County Downstream	HUC8
2190	Saline Cr.	Jefferson	07140102
3359	Soap Cr.	Gasconade	07140103
0658	Spring Cr.	Sullivan	10280202
2072	Spring Cr.	Franklin	07140103
1870	Spring Cr. [Spring Br.]*	Dent	07140102
3138	St. Johns Ditch*	New Madrid	08020201
0685	Sweet Spring Cr.	Randolph	10280203
0327	Third Fk. Platte R.*	Buchanan	10240012
2130	Three Hill Cr.	St. Francois	07140104
0316	Todd Cr.	Platte	10240012
1687	Trib. to Busch Cr.	Franklin	10300200
0805	Trib. to Factory Cr.	Moniteau	10300102
3509	Trib. to Flat Cr.	Pettis	10300103
1268	Trib. to Massey Cr.	Cass	10290108
3488	Trib. to Muddy Cr.	Pettis	10300103
0948	Trib. to Strobel Br.	Cole	10300102
0500	Trib. to W. Fk. Lost Cr.	Dekalb	10280101
0074	Troublesome Cr.	Marion	07110003
1610	Tuque Cr.	Warren	10300200
0199	Turkey Cr.	Lincoln	07110008
2985	Turkey Cr.	Stoddard	08020203
2846	Twelve Mile Cr.	Madison	08020202
0929	W. Fk. Post Oak Cr. [W. Fk. Postoak Cr.]	Johnson	10300104
0556	W. Honey Cr. [W. Fk. Honey Cr.]	Grundy	10280102
2139	Wallen Cr.	Washington	07140104
0937	Walnut Cr.	Johnson	10300104
0319	Wilkerson Cr.	Clay	10240012
1500	Wolf Cr.	Wright	10290201
2228	Wolf Cr.	Cape Girardeau	07140107

* See Section 1.G. of this document for additional information on segmentation revisions to this water body.

Lakes in Table G:

Water Body ID	Water Body Name	County Downstream	HUC8
7182	Fayette Lake #3 (Rogers)	Howard	10300102
7147	Fountain Grove Lakes	Linn	10280103
7005	Marais Temps Clair	St. Charles	07110009
7340	Mingo Lakes	Stoddard	08020203
7164	Moberly Park Lake	Randolph	10290203
7165	Moberly Rothwell Lake	Randolph	10280203
7402	Mozingo Lake	Nodaway	10240013
7337	Otter Slough	Stoddard	08020203
7238	Pomme de Terre Lake	Hickory	10290107
7353	Twin Borrow Pits	Pemiscot	08010100
7006	Willowwood Lake	St. Charles	07110009
7354	Wolf Bayou	Pemiscot	08010100

Table 10. Water bodies Missouri designated and EPA approves for the protection of SCR as the highest attainable use. The "Determination Use" column identifies the use indicated as highest attainable by EPA's October 31, 2006 determination. "N/A" indicates those waters that were not part of EPA's October 31, 2006 determination. The table below includes some water body names in brackets. The name in brackets is the old name that Missouri revised during this triennial review. See Table 4 and Section 1.G. of the enclosure for additional discussion.

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
1470	Bell Cr.	C	6	SCR	Depth and evidence support SCR designation.	SCR approved
1746	Big Bottom Cr.	C	1.5	SCR	Depth and evidence support SCR designation.	SCR approved
2036	Big Cr.	C	3.3	N/A	Depth and evidence support SCR designation.	SCR approved
441	Big Muddy Cr.	C	12	SCR	Depth, comments, and evidence support SCR designation.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
34	Birkhead Br.	C	2	WBCR	Depth and comment support SCR designation. WBCR determination based on max depth of 3.5 feet. MDNR did not designated WBCR based on the 2005 MDNR UAA because depth appeared to be estimated and no photos available. 2006 UAA sites downstream of classified segment did not find 1 meter depth. 2007 UAA considered representative.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
1028	Callahan Cr.	C	13.8	WBCR	In the Order of Rulemaking MDNR cites 1.91 inches of rain prior to the 2006 UAA. Confirmed assertion with data from NOAA. 2005 and 2006 UAAs also conducted during drought. Downstream portion of 2007 UAA not conducted during drought. Depth and evidence support SCR use designation.	SCR approved
3051	Caney Cr.	C	11.5	N/A	Depth and comment support SCR designation.	SCR approved
707	Cow Cr.	C	2.5	SCR	Depth and evidence support SCR designation.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
555	E. Honey Cr. [E. Fk. Honey Cr.]	C	13.6	No new or revised standard necessary	Depth and comment support SCR designation.	SCR approved
3657	Fountain Farm Br.	C	1.8	WBCR	Depth and evidence support SCR designation.	SCR approved
1307	Gillum Cr.	C	2.5	WBCR	Depth and comment support SCR designation. WBCR determination based on average depth, which was replaced by median depth in revised protocol. Stream does not meet max depth criterion for WBCR, but does have depth to support SCR.	SCR approved
3202	Glendale Fk.	C	5.4	N/A	Depth and comment support SCR designation.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
2201	Goose Cr.	C	3	N/A	Depth and comment support SCR designation.	SCR approved
3425	Hogan Fk. [Hogan's Fk.]	C	5.8	N/A	Depth and comment support SCR designation. MDNR clarified interpretation of protocol that median depth is to be assessed using all data from the site, not assessed for individual features. Run at Site 1 had median of 0.5 meter and maximum of 0.7 meter. Run maximum similar to maximum at other sites, and does not change decision between SCR and WBCR.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
1018	Kelley Br.	C	5.8	SCR	Depth and comment support SCR designation. Most downstream point of Kelley Branch is in Pinnacle Youth Park. Called Joann Cowan (572-449-7946) on 2-5-2010 to discuss use of Kelley Branch. Said that is not aware of people swimming/immersing themselves in Kelley Branch. Noted that most people use Spring Fork, the creek into which Kelley Branch flows.	SCR approved
1303	Knob Cr.	C	8.4	SCR	Depth and comment support SCR designation.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
3113	Lateral Ditch #2	C	2.4	SCR	Depth and comment support SCR designation.	SCR approved
3032	Main Ditch #8	C	11.5	WBCR	Depth and comment support SCR designation.	SCR approved
3839	Maline Cr.*	C	0.5	WBCR	Depth, comments, and evidence support SCR designation.	SCR approved
3703	North R.	C	8.7	WBCR	Depth and evidence support SCR designation.	SCR approved
521	Panther Cr.	C	5	SCR	Depth and comment support SCR designation.	SCR approved
176	Paris Br.	C	3	SCR	Depth and comment support SCR designation.	SCR approved
3827	River des Peres	P	2.6	N/A	Depth and comment support SCR designation.	SCR approved
983	Roark Br.	C	1.3	N/A	Evidence of use supports SCR designation.	SCR approved

WBID	Water Body Name	Class	Miles	Determination Use	Explanation	EPA Decision
1603	Spring Cr.	C	3.7	N/A	Evidence of use supports SCR designation.	SCR approved
2759	Toms Cr.	C	2.2	N/A	Depth and evidence support SCR designation.	SCR approved
1530	Trib. to L. Beaver Cr.	C	2.3	SCR	Depth and comment support SCR designation.	SCR approved
1006	Trib. to Perche Cr.	C	2	N/A	Depth supports SCR designation	SCR approved
2121	Trib. to Shibboleth Cr.	C	1.3	SCR	Depth and observed use support SCR designation	SCR approved
687	Walnut Cr.	C	3.5	N/A	Evidence of use supports SCR designation.	SCR approved

* See Section 1.G. of this document for additional information on segmentation revisions to this water body.

Table 11. Water bodies for which EPA approves Missouri's decision to remove the WBC-B recreational use. The table below includes some water body names in brackets. The name in brackets is the old name that Missouri revised during this triennial review. See Table 4 for additional discussion.

WBID	Water Body Name	Class	Miles	EPA Decision
3813	Ditch #16*	C	11.2	Removal of WBC-B approved
2978	Dudley Main Ditch	C	0.8	Removal of WBC-B approved
2372	Millan Hollow [Trib. to Davis Cr.]	C	1.4	Removal of WBC-B approved
0530	Sheep Cr.	C	1.0	Removal of WBC-B approved
0950	Trib. to N. Moreau Cr.	C	2.4	Removal of WBC-B approved

* See Section 1.G. of this document for additional information on segmentation revisions to this water body.

Table 12. Water bodies for which EPA disapproves Missouri's decision to remove the WBC-B recreational use.

WBID	Water Body Name	Class	Miles	Explanation	EPA Decision
1220	Bear Cr.	C	7.4	Data indicates SCR attainable.	Removal of WBC-B disapproved
0491	Campbell Cr.	C	2.8	Data indicates SCR attainable.	Removal of WBC-B disapproved
0442	Hickory Cr.	C	2.8	Data indicates SCR attainable.	Removal of WBC-B disapproved
1437	Lindley Cr.	C	2.4	Data indicates SCR attainable.	Removal of WBC-B disapproved
2815	Pike Cr.	C	6.0	Data indicates SCR attainable.	Removal of WBC-B disapproved
3410	Reid Cr.	C	2.3	Data indicates SCR attainable.	Removal of WBC-B disapproved

0382	Rollins Cr.	C	7.0	Data indicates SCR attainable. 2005 UAA also contained depths of 0.5-meter or more.	Removal of WBC-B disapproved
0952	Scott Br.	C	0.5	Data indicates SCR attainable.	Removal of WBC-B disapproved
1837	Trib to Cape La Croix	C	1.7	Data indicates SCR attainable.	Removal of WBC-B disapproved
0791	Trib. to Clark Fk.	C	0.5	Data indicates SCR attainable.	Removal of WBC-B disapproved
0484	Trib. to Wildcat Cr.	C	2.0	Data indicates SCR attainable.	Removal of WBC-B disapproved
3175	Truitt Cr.	C	6.4	Data indicates SCR attainable.	Removal of WBC-B disapproved

Table 13. Lakes with Site-Specific Criteria from Table M.

Lake Ecoregion	Lake	County	Site Specific Criteria		
			TP	Tn	Chl
Plains	Plains Bowling Green Lake	Pike	21	502	6.5
	Bowling Green Lake (old)	Pike	31	506	5.0
	Forest Lake	Adair	21	412	4.3
	Fox Valley Lake	Clark	17	581	6.3
	Hazel Creek Lake	Adair	27	616	6.9
	Lincoln Lake – Cuivre River State Park	Lincoln	16	413	4.3
	Marie, Lake	Mercer	14	444	3.6
	Nehai Tonkaia Lake	Chariton	15	418	2.7
	Viking, Lake	Daviess	25	509	7.8
	Waukomis Lake Platte	Platte	25	553	11.0
	Weatherby Lake Platte	Platte	16	363	5.1
Ozark Border	Goose Creek Lake	St Francois	12	383	3.2
	Wauwanoka, Lake	Jefferson	12	384	6.1
Ozark Highlands	Clearwater Lake	Wayne-Reynolds	13	220	2.6
	Council Bluff Lake	Iron	7	229	2.1
	Crane Lake	Iron	9	240	2.6
	Fourche Lake	Ripley	9	236	2.1
	Loggers Lake	Shannon	9	200	2.6
	Lower Taum Sauk Lake	Reynolds	9	203	2.6
	Noblett Lake	Douglas	9	211	2.0
	St. Joe State Park Lakes	St Francois	9	253	2.0
	Sunnen Lake	Washington	9	274	2.6
	Table Rock Lake	Stone	9	253	2.6
	Terre du Lac Lakes	St Francois	9	284	1.7
	Timberline Lakes	St Francois	8	276	1.5

Table 14. Nonsubstantive changes to 10 CSR 20-7.031.

CSR Section	Revision	Comment
7.031 Various	Added commas to lists in a series (e.g., "…*swimming, water skiing , or skin diving.*") and to demarcate the thousandths place in numbers (e.g., *1 ,000*)	Nonsubstantive revision
7.031 Various	Revised all instances of "~~*seven (7) day Q10*~~" to "*7Q10*"	Nonsubstantive revision
7.031 (1)(E)	Revised cross-reference from "~~*(4)(P)*~~" to "*(4)(Q)*"	Re-lettering
7.031 (1)(Y)	Revised "*lower twenty-fifth percentile*" to "*lower quartile (twenty-fifth percentile)*"	Clarification
7.031 (3)(A)5.	Revised "*vegetation* ~~*al*~~"	Typographical
7.031 (4)(O) through 7.031 (4)(S)	Lettering changes due to addition of new section (N)	Re-lettering
7.031 (4)(Q)	Revised "~~*most*~~" to "*more*"	Grammatical correction
7.031 (5)(B)	Revised "~~*comsumption*~~" to "*consumption*"	Typographical
7.031 Table A	Added second asterisk symbol for "** *Geometric mean…* " in Table A to accommodate new asterisk for Table K.	Nonsubstantive
7.031 Table A	Added cross-reference in metals criteria table "*refer to text in 10 CSR 20-7.031(4)(B)2.)*"	Clarification
7.031 Table A	Revised "~~*Nonhardness*~~" to "*Not Hardness Dependent*"	Nonsubstantive
7.031 Table A	Revised "*Chro* ~~*n*~~ *mium VI*"	Typographical
7.031 Table A	Revised "*Dichlorobromo m ethane*"	Typographical

Table 15. Nonsubstantive revisions to the classified stream names in 10 CSR 20-7.031 Table H.

Water Body ID	Old Water Body Name	New Water Body Name	County Downstream	HUC 8
2175	Andrew Br.	Andrews Br.	St. Francois	07140104
2306	Aslinger Cr.	Aslinger Br.	Madison	07140107
2307	Aslinger Cr.	Aslinger Br.	Madison	07140107
2035	Bachelor Cr.	Roth Cr.	Franklin	07140103
1209	Barkers Cr.	Barker Cr.	Henry	10290108
2449	Barrett Hollow	Barret Hollow	Ozark	11010003
2621	Beaver Dam Cr.	Beaverdam Cr.	Butler	11010008
2622	Beaver Dam Cr.	Beaverdam Cr.	Ripley	11010008
3548	Beaver Dam Cr.	Beaverdam Cr.	Pettis	10300104
2831	Beehive Hollow	Beehole Hollow	Butler	11010007
2530	Bell Pond Hollow	Ball Pond Hollow	Ozark	11010006
2324	Big Cr.	E. Fk. Big Cr.	Madison	07140107
2237	Big Hollow Cr.	Big Hollow Br.	Bollinger	07140107
1697	Big Tavern Cr.	Tavern Cr.	Franklin	10300200
0124	Billy's Br.	Billys Br.	Macon	07110006
2775	Blue Spring Slough	Snyder Ditch	Butler	11010007
0775	Boones Branch Cr.	Boones Br.	Howard	10300102
0931	Bradley Cr.	Bradley Br.	Johnson	10300104
0069	Brush Cr.	Brushy Cr.	Schuyler	07110002
2921	Brush Cr.	Brushy Cr.	Iron	08020202
1670	Buck Lick Cr.	Bucklick Cr.	Franklin	10300200
2419	Butter Cr.	Butler Cr.	Barry	11010001
2215	Cansy Fk.	Caney Fk.	Cape Girardeau	07140107
2216	Cansy Fk.	Caney Fk.	Cape Girardeau	07140107
1837	Cape La Croix Cr.	Trib. to Cape La Croix Cr.	Cape Girardeau	07140105
1114	Carver Cr.	Trib. to Bauer Br.	Benton	10290109
3081	Cato Slough	Ditch 101	Stoddard	08020204
2720	Cave Fk. Cr.	Cave Fk.	Ripley	11010008
1631	Clear Cr.	Clear Fk.	Montgomery	10300200
1155	Conn Cr.	Conns Cr.	Camden	10290109
0745	Connor Cr.	Conner Cr.	Boone	10300102
0365	Crabapple Cr.	Trib to Crabapple Cr.	Ray	10300101
3307	Crooked Cr.	Crooked Br.	Cass	10290108
2417	Davis Hollow	Off Davis Hollow	Barry	11010001
0539	Dead Oak Cr.	Dead Oak Br.	Caldwell	10280101
3110	Ditch #36	Main Ditch #36	Dunklin	08020204
2777	Ditch to Black R.	Blue Spring Slough	Butler	11010007
3120	Ditch to Buffalo Ditch	Pole Cat Slough	Dunklin	08020204
3168	Douger Br.	Chat Cr.	Lawrence	11070207
3189	Dry Br.	Dry Fk.	Jasper	11070207
1441	Dry Fk. Cr.	Dry Fk.	Polk	10290107
1443	Dry Fk. Cr.	Dry Fk.	Polk	10290107
1862	Dry Fk. Cr.	Dry Fk.	Phelps	07140102
1866	Dry Fk. Cr.	Dry Fk.	Phelps	07140102
2039	Dry Fk. Cr.	Dry Fk.	Gasconade	07140103
1314	Drywood Cr.	Dry Wood Cr.	Vernon	10290104
0682	E. Fk. Chariton R.	E. Fk. Little Chariton R.	Chariton	10280203

Water Body ID	Old Water Body Name	New Water Body Name	County Downstream	HUC 8
0555	E. Fk. Honey Cr.	E.Honey Cr.	Grundy	10280102
0619	E. Fk. Medicine Cr.	Medicine Cr.	Grundy	10280103
1891	E. Prong	E. Prong Crooked Cr.	Dent	07140102
1264	East Br.	E. Br. S. Grand R.	Cass	10290108
2781	East Prong	East Prong Indian Cr.	Butler	11010007
0620	Elm Cr.	Elm Br.	Putnam	10280103
3206	Fidelity Cr.	Fidelity Br..	Jasper	11070207
3220	Five Mile Cr.	Fivemile Cr.	Newton	11070207
1391	Flint Hill	Flint Hill Br.	Greene	10290106
1885	Freshwater Cr.	Fishwater Cr.	Dent	07140102
0821	Gibler Cr.	Meadows Cr.	Cole	10300102
0822	Gibler Cr.	Meadows Cr.	Cole	10300102
1142	Grand Glaize Cr.	Grandglaize Cr.	Miller	10290109
1216	Granddaddy's Cr.	Granddaddy Cr.	Henry	10290108
1036	Gum Spring Cr.	Gum Spring Br.	Cole	10290111
2574	Hagard Cr.	Hogard Cr.	Ozark	11010006
0708	Harrison Cr.	Harrison Br.	Callaway	10300102
2806	Hartman Cr.	Mill Cr.	Butler	11010007
2960	Hickory Cr.	Hickory Flat Cr.	Wayne	08020202
1980	Hinch Cr.	Hinch Br.	Crawford	07140102
1981	Hinch Cr.	Hinch Br.	Crawford	07140102
3425	Hogan's Fk.	Hogan Fk.	Johnson	10300104
1011	Hominy Cr.	Hominy Br.	Boone	10300102
1845	Houston Cr.	Hoosier Cr.	Franklin	07140102
1951	Indian Cr.	Trib. To Cub Cr.	Washington	07140102
0749	Jamerson Cr.	Jemerson Cr.	Boone	10300102
1916	James Cr.	James Br.	Crawford	07140102
1917	James Cr.	James Br.	Crawford	07140102
1431	Jurden Br.	Jordan Br.	Hickory	10290107
2599	Kelley Hollow	Kelly Hollow	Oregon	11010011
3592	Kiefer Cr.	Keifer Cr.	St. Louis	07140102
1325	L. Drywood Cr.	L. Dry Wood Cr.	Vernon	10290104
1326	L. Drywood Cr.	L. Dry Wood Cr.	Vernon	10290104
2522	L. Indian Cr.	Middle Indian Cr.	Douglas	11010006
3200	L. N. Fk. Spring R.	L. N. Fork	Jasper	11070207
3629	L. Pine Cr.	L. Piney Cr.	Texas	10290201
1520	L. Piney Cr.	Trib to Roubidoux Cr.	Pulaski	10290201
2232	L. Whitewater Cr.	Trib to L. Whitewater Cr.	Bollinger	07140107
1496	Lick Fk. Gasconade R.	Gasconade R.	Wright	10290201
1497	Lick Fk. Gasconade R.	Gasconade R.	Wright	10290201
2534	Lottie Cr.	Lottie Hollow	Ozark	11010006
0698	M. Fk. Chariton R.	M. Fk. L. Chariton R.	Macon	10280203
0691	M. Fk. Chariton R.	M. Fk. Little Chariton R.	Chariton	10280203
2117	Madden Cr.	Maddin Cr.	Washington	07140104
0712	Maddox Cr.	Maddox Br.	Callaway	10300102
0302	Mass Cr.	Moss Br.	Nodaway	10240010
3611	Mayhen Br.	Mayhan Br.	Texas	11010008
0123	Middle Fk. Salt R.	M. Fk. Salt R.	Macon	07110006
2645	Middle Prong	Middle Prong Brushy Cr	Shannon	11010008

Water Body ID	Old Water Body Name	New Water Body Name	County Downstream	HUC 8
1889	Middle Prong	Middle Prong Crooked Cr.	Dent	07140102
1890	Middle Prong	Middle Prong Crooked Cr.	Crawford	07140102
0266	Mill Cr.	Hickory Cr	Holt	10240005
2124	Mill Cr.	W. Br. Mill Cr.	Washington	07140104
0674	Mussel Fork Cr.	Mussel Fk.	Macon	10280202
2026	N. Fk. L. Meramec R.	L. Meramec R.	Franklin	07140102
2027	N. Fk. L. Meramec R.	L. Meramec R.	Franklin	07140102
2447	N. Fk. Spring Cr.	N. Fk. Bratten Spring Cr.	Ozark	11010003
2498	N. Fk. White R.	North Fork R.	Ozark	11010006
2507	N. Fk. White R.	North Fork R.	Douglas	11010006
2525	N. Fk. White R.	North Fork R.	Douglas	11010006
3158	Old #7 Chute	Chute of Island No.7	Mississippi	08010100
0027	Old Kings Lake Sl.	Old Kings Lake Cr	Lincoln	07110004
0026	Old Kings Lake Sl.	Old Kings Lake Cr.	Lincoln	07110004
0028	Old Kings Lake Sl.	Old Kings Lake Cr.	Lincoln	07110004
3044	Otter Slough	Otter Slough Ditch	New Madrid	08020204
3486	Painter Cr.	Painter Br.	Pettis	10300103
1403	Pickeral Cr.	Pickerel Cr.	Greene	10290106
1404	Pickeral Cr.	Pickerel Cr.	Greene	10290106
2894	Pilot Knob Cr.	Knob Cr.	Iron	08020202
2129	Pond Cr.	Trib. to Pond Cr.	Washington	07140104
0928	Postoak Cr.	Post Oak Cr.	Johnson	10300104
1838	Powers Island Chute	Doolan Chute	Scott	07140105
1641	Prairie Br.	Prairie Fk.	Montgomery	10300200
1643	Prairie Br.	Prairie Fk.	Montgomery	10300200
0627	Roach Lake	Roach Lake Cr.	Livingston	10280103
3623	Rock Br.	Rocky Br.	Texas	10290202
2903	Rock Cr.	Lower Rock Cr.	Madison	08020202
1098	Rocky Fk. Cr.	Rocky Ford. Cr.	Morgan	10290109
1089	Rogers Cr.	Rodgers Cr.	Maries	10290111
2024	S. Fk. L. Meramec R.	Pierce Cr.	Franklin	07140102
2025	S. Fk. L. Meramec R.	Pierce Cr.	Franklin	07140102
2446	S. Fk. Spring Cr.	S. Fk. Bratten Spring Cr.	Ozark	11010003
1915	S. Rock Cr.	S. Rock Br.	Crawford	07140102
2158	Saline Cr.	Belleview Cr.	Iron	07140104
3365	Schuler Cr.	Schulte Cr.	Gasconade	10290203
3368	Schuler Cr.	Shuyler Cr.	Greene	11010002
1451	Schulte Cr.	Schultz Cr.	Polk	10290107
1447	Self Br.	Selph Br.	Greene	10290107
0621	Shankton Cr.	W. Fk. Medicine Cr.	Putnam	10280103
2119	Shibboleth Cr.	Shibboleth Br.	Washington	07140104
2120	Shibboleth Cr.	Shibboleth Br.	Washington	07140104
1938	Shoal Cr.	L. Shoal Cr.	Crawford	07140102
2218	Shrawn Cr.	Shrum Cr.	Bollinger	07140107
2219	Shrawn Cr.	Shrum Cr.	Bollinger	07140107
2742	Shutin Cr.	Shut-in Cr.	Reynolds	11010007
2743	Shutin Cr.	Shut-in Cr.	Iron	11010007
1679	Slaughter Br.	Brushy Cr.	Franklin	10300200
1630	Smith Cr.	Smith Br.	Montgomery	10300200

Water Body ID	Old Water Body Name	New Water Body Name	County Downstream	HUC 8
1359	Snag Cr.	Snag Br.	Cedar	10290106
2317	Snowden Cr.	Snowden Br.	Madison	07140107
0939	South Fk.	South Fk. Blackwater R.	Saline	10300104
1870	Spring Br.	Spring Cr.	Dent	07140102
2516	Spring Cr.	N. Fk. Spring Cr.	Howell	11010006
2979	Spring Cr.	Spring Cr. Ditch	Stoddard	08020203
3132	St James Bayou	James Bayou	Mississippi	08020201
3002	Stanley Cr.	Johns Br.	Wayne	08020203
0787	Stevens Br.	Stephens Br.	Cooper	10300102
1435	Stinking Claude Cr.	Stinking Cr.	Polk	10290107
2682	Stories Cr.	Storys Cr.	Shannon	11010008
2402	Sugar Camp Hollow	Sugarcamp Hollow	Barry	11010002
0173	Sutton Br.	Sitton Br.	Lincoln	07110008
0174	Sutton Br.	Sitton Br.	Lincoln	07110008
2680	Sutton's Cr.	Sutton Cr.	Shannon	11010008
2527	Sweeten Hollow	Marys Hollow	Ozark	11010006
2829	Ten Mile Cr.	Tenmile Cr.	Butler	11010007
2830	Ten Mile Cr.	Tenmile Cr.	Butler	11010007
2359	Terrell Br.	Terell Br.	Webster	11010002
2062	Three Mile Cr.	Threemile Cr.	Franklin	07140103
2233	Tr. to L. Whitewater Cr.	L. Whitewater Cr.	Bollinger	07140107
1289	Trib. M. Fk. Tebo Cr.	Trib. to Trib. M. Fk. Tebo Cr.	Henry	10290108
2113	Trib. Old Mines Cr.	Salt Pine Cr.	Washington	07140104
0005	Trib. to Bay de Charles	Walkers Slough	Marion	07110004
0006	Trib. to Bay de Charles	Walkers Slough	Marion	07110004
3549	Trib. to Beaver Dam Ck.	Trib. to Beaverdam Cr.	Pettis	10300104
3550	Trib. to Beaver Dam Ck.	Trib. to Beaverdam Cr.	Pettis	10300104
3308	Trib. to Big Cr.	Trib. to Middle Big Cr.	Cass	10290108
3582	Trib. to Big R.	Cedar Run	St. Francois	07140104
2805	Trib. to Black R.	Widow Cr.	Butler	11010007
1667	Trib. to Boeuf Cr.	Langejammer Cr.	Gasconade	10300200
1669	Trib. to Boeuf Cr.	Prairie Fk.	Franklin	10300200
1784	Trib. to Bois Brule Ditch	Trib to trib to Bois Brule Ditch	Perry	07140105
1690	Trib. to Browns Br.	Browns Br.	Franklin	10300200
1671	Trib. to Buck Lick Cr.	Trib. to Bucklick Cr.	Franklin	10300200
1672	Trib. to Buck Lick Cr.	Trib. to Bucklick Cr.	Franklin	10300200
2156	Trib. to Cedar Cr.	Coon Hollow	Iron	07140104
0743	Trib. to Cedar Cr.	Renfro Cr.	Callaway	10300102
2372	Trib. to Davis Cr.	Millan Hollow	Greene	11010002
3508	Trib. to Flat Cr.	Trib. To trib. to Flat Cr.	Pettis	10300103
2399	Trib. to Flat Cr.	Willow Br.	Barry	11010002
1540	Trib. to Gasconade R.	Buck Cr.	Osage	10290203
3481	Trib. to Gasconade R.	Hope Cr.	Osage	10290203
1541	Trib. to Gasconade R.	Peggy Br	Osage	10290203
1542	Trib. to Gasconade R.	Peggy Br.	Osage	10290203
1173	Trib. to Greasy Cr.	Hankens Br.	Dallas	10290110
3426	Trib. to Hogan's Fk.	Trib. to Hogan Fk.	Johnson	10300104
1921	Trib. to Indian Cr.	Todd Hollow	Crawford	07140102
3649	Trib. to L. Drywood Cr.	Trib. to L. Dry Wood Cr.	Vernon	10290104

Water Body ID	Old Water Body Name	New Water Body Name	County Downstream	HUC 8
3728	Trib. to L. Pomme de Terre	Trinity Hollow	Benton	10290107
3466	Trib. to L. Tavern Cr.	Meddleberger Br.	Maries	10290111
0281	Trib. to Lincoln Cr.	Trib. To Nodaway R.	Andrew	10240010
2788	Trib. to McKenzie Cr.	Greasy Cr	Wayne	11010007
2789	Trib. to McKenzie Cr.	Lick Br.	Wayne	11010007
3327	Trib. to Meramec R.	Avery Hollow	Crawford	07140102
2126	Trib. to Mill Cr.	Trib. to W. Mill Cr.	Washington	07140104
0949	Trib. to N. Moreau Cr.	Wieneke Br.	Moniteau	10300102
2128	Trib. to Pond Cr.	Pond Cr.	Washington	07140104
1932	Trib. to Possum Trot Hol.	Mill Rock Cr.	Crawford	07140102
1807	Trib. to S. Fk. Apple Cr.	Froggy Br.	Cape Girardeau	07140105
0989	Trib. to S. Moreau Cr.	Trib to Trib. to S. Moreau Cr.	Moniteau	10300102
0794	Trib. to Splice Cr.	Thompson Br.	Moniteau	10300102
2515	Trib. to Spring Cr.	S. Fk. Spring Cr.	Howell	11010006
1683	Trib. to St. John's Cr.	Long Br.	Franklin	10300200
1682	Trib. to St. John's Cr.	Whisky Cr.	Franklin	10300200
2409	Trib. to Table Rock Lk.	Big Cr.	Barry	11010001
3580	Trib. to Terre Bleue Cr.	Pike Run	St. Francois	07140104
3581	Trib. to Terre Bleue Cr.	Pike Run	St. Francois	07140104
3405	Trib. to Weaubleau Cr.	Trib. to Trib. to Weaubleau Cr	Hickory	10290105
1379	Turkey Cr.	Trib. to Turkey Cr.	Polk	10290106
0788	Tutt Br.	Coalbank Cr.	Cooper	10300102
1317	W. Fk. Drywood Cr.	W. Fk. Dry Wood Cr.	Vernon	10290104
0556	W. Fk. Honey Cr.	W. Honey Cr.	Grundy	10280102
0612	W. Fk. Locust Cr.	W. Locust Cr.	Linn	10280103
0623	W. Fk. Medicine Cr.	L. Medicine Cr.	Grundy	10280103
0929	W. Fk. Postoak Cr.	W. Fk. Post Oak Cr.	Johnson	10300104
2590	W. Fk. Spring R.	W. Fk. Spring Cr.	Howell	11010010
0149	W. Lick Cr.	Elm Br.	Monroe	07110006
1291	Wades Cr.	Wade Cr.	Henry	10290108
3521	Walnut Cr.	Walnut Br.	Pettis	10300103
3573	Wellson Slough	Harpst Chute	Platte	10240011
1318	West Br.	West Elm Br.	Barton	10290104
2782	West Prong	West Prong Indian Cr.	Butler	11010007
1505	Whetstone Cr.	East Whetstone Cr.	Wright	10290201
2595	White Cr.	Whites Cr.	Oregon	11010011
3745	Wilson Cr.	Trib. To N. Br. Wilson Cr.	Greene	11010002
2375	Wilson Cr.	Wilsons Cr.	Christian	11010002
0598	Winnegan Cr.	Winigan Cr.	Linn	10280103
0122	Winn's Cr.	Winn Br.	Macon	07110006
1425	Wright Br.	Eddington Br.	Lawrence	10290106
2236	Yantz Cr.	Yantz Br.	Bollinger	07140107
0479	Zounds Br.	Zounds Cr.	Gentry	10280101

Table 16. Nonsubstantive revisions to the classified lake names in 10 CSR 20-7.031 Table G.

Water Body ID	Old lake name	New lake name	County Downstream	HUC8
7225	Adrian Lake	Adrian Reservoir	Bates	10290108
7359	Aggrevation Lake	Lonedell Lake	Franklin	07140102
7360	Amarugia Highlands Lake	Amarugia Lake	Cass	10290108
7342	Anderson Lake	Anderson's Whippoorwill Farm Lake	Stoddard	08020204
7220	Annette Lake	Annette, Lake	Cass	10290108
7418	Archie Lake	Archie Lakes	Cass	10290108
7363	Arrow Rock Lake	Big Soldier Lake	Saline	10300102
7172	Atlanta Lake	Atlanta City Lake	Macon	10290105
7364	Baja Lake Assoc. Lake	Baha Trail Lake	Washington	07140102
7106	Bethany Lake #1	Old Bethany City Reservoir	Harrison	10280101
7109	Bethany Reservoir	North Bethany City Reservoir	Harrison	10280101
7367	Big Buffalo Wildlife Area L	Big Buffalo C.A. Lakes	Benton	10290109
7351	Birds Blue Hole	Tom Bird Blue Hole	Mississippi	08010100
7369	Blue Lake	Blues Pond	Phelps	10290203
7421	Blue Mountain Camp	Blue Mountain Lake	Madison	08020202
7303	Bonne Ava Lake	Bonne Aqua Lake	St. Francois	07140104
7004	Bowling Green Lake	Bowling Green Reservoir	Pike	07110004
7240	Bray Lake	Brays Lake	Phelps	10290203
7372	Camp Irondale Lake	Cherokee, Lake	Washington	07140104
7081	Carroll Reservoir	Carrollton Recreation Lake	Carroll	10300101
7422	Clever Dell Lake	Clover Dell Park Lake	Pettis	10300103
7375	Cole County Park Lake	Jaycee Park Lake (Cole County)	Cole	10300102
7376	Conner O. Fewell Lake	Conner O. Fewell C.A. Lakes	Henry	10290108
7352	Corner Blue Hole Lake (34)	34 Corner Blue Hole	Mississippi	08010100
7255	Creve Couer Lake	Creve Coeur Lake	St. Louis	10300200
7012	Downing Lake	Downing Reservoir	Schuyler	07110002
7228	Drexel Lake #1	Drexel Lake	Bates	10290102

7230	Drexel Lake #2	Drexel City Reservoir South	Bates	10290102
7192	E A Pape Lake (Concordia)	Edwin A Pape Lake	Lafayette	10300104
7330	Farmington City Lake	Hager Lake	St. Francois	08020202
7184	Fayette Lake #1	Davis Lake	Howard	10300102
7183	Fayette Lake #2	Peters Lake	Howard	10300102
7182	Fayette Lake #3 (Rogers)	D.C. Rogers Lake	Howard	10300102
7289	Fort Westside Lake	Klontz Lake	Crawford	07140103
7335	Frontier Lake	Eagle Sky Lake	Wayne	08020202
7343	Glaus Lake	Raymond Claus Lake	Stoddard	08020204
7217	Harrisonville City Lake	City Lake, Harrisonville	Cass	10290108
7214	Harrisonville, Lake	Harrisonville City Lake	Cass	10290108
7331	Hematite (Bismarck) Lake	Carl DiSalvo Lake	St. Francois	08020202
7179	Herring Lake	Paul Herring Lake	Callaway	10300102
7191	Higginsville N. Lake	Higginsville Reservoir (North)	Lafayette	10300104
7190	Higginsville S. Lake	Higginsville Reservoir (South)	Lafayette	10300104
7193	Holden Lake (New)	Holden City Lake	Johnson	10300104
7300	Holiday Shores Lake	Wing Lake	Washington	07140104
7430	Howell Mill Lake	Howell Mill Lakes	Washington	07140102
7389	Indian Creek Lake	Indian Creek Community Lake	Livingston	10280101
7288	Indian Hills Lake	Indian Lake	Crawford	07140103
7248	Innsbrook Lake	Lucern, Lake	Warren	10300200
7333	Ironton Shepard Mountain Lake	Shepard Mountain Lake	Iron	08020202
7101	Jacomo Lake	Jacomo, Lake	Jackson	10300101
7104	Jamesport City Reservoir	Jamesport City Lake	Daviess	10280101
7392	Kahrs Boger Lake	Kahrs-Boger Park Lake	Pettis	10300103
7210	KC Angler's Club Lake	Loch Leonard	Cass	10290108
7224	KC Southern Lake	Lisle Pond	Cass	10290108
7355	Kellogg City Lake	Kellogg Lake	Jasper	11070207
7114	King City Lake	King City New Reservoir	Gentry	10240012
7113	King City Lake	King City Old Reservoir	Gentry	10280101
7263	Lacawana, Lake	Lacawanna, Lake	St. Francois	07140101
7174	Lahweena, Lake	Lochaweeno, Lake	Callaway	10300102

7044	Lakeview Lake	Lakeview Park Lake	Audrain	07110006
7100	Lakewood Lake	Lakewood Lakes	Jackson	10300101
7356	Lamar City Lake	Lamar Lake	Barton	11070207
7437	Lamine C.A. Lakes	Lamine River C.A. Lakes	Cooper	10300103
7021	Lewis County #1 Lake (Ewing)	Ewing Lake	Lewis	07110002
7111	Limpp Lake	Limpp Community State Lake	Gentry	10240012
7049	Lincoln Lake-Cuivre River S.P.	Lincoln, Lake (Cuivre River S.P.)	Lincoln	07110008
7216	Luna Lake	Luna, Lake	Cass	10290108
7438	Maysville Lake #3	Willow Brook Lake	Dekalb	10280101
7319	McCormick Lake	McCormack Lake	Oregon	11010011
7399	McKay Park Lake	Sunset Lake	Cole	10300102
7013	Memphis Lake #1	Memphis Reservoir	Scotland	07110002
7014	Memphis Lake #2	Lake Showme	Scotland	07110002
7130	Mercer Lake	Berndt Lake	Mercer	10280102
7439	Milan Lake (New)	Milan Lake South	Sullivan	10280103
7144	Milan Lake (Old)	Milan Lake North	Sullivan	10280103
7146	Milan Lake Elmwood	Elmwood City Lake	Sullivan	10280103
7340	Mingo Lakes	Monopoly Lake	Stoddard	08020203
7164	Moberly Park Lake	Rothwell Lake (Moberly Park Lake)	Randolph	10290203
7165	Moberly Rothwell Lake	Water Works Lake	Randolph	10280203
7308	Montonese Lake	Montowese, Lake	Jefferson	07140104
7065	Mud Lake	Old Mud Lake	Buchanan	10240011
7158	Nehai Tonkayea Lake	Nehai Tonkayea, Lake	Chariton	10280202
7403	Nell Lake	Nell, Lake	Jackson	10290108
7206	Niangua Lake	Niangua, Lake	Camden	10290110
7243	Northwoods, Lake	Northwood, Lake	Gasconade	10290203
7357	Oscie Ora Acres	Oscie Ora Acres Lake	Jasper	11070207
7337	Otter Slough	Otter Lake	Stoddard	08020203
7107	Panther Creek C-2 Lake	Panther Creek D-1 Lake	Harrison	10280101
7404	Peabody Wildlife Area Lake	Peabody Wildlife Area Lakes	Bates	10290102
7047	Perry Lake #1	City Lake #1 (Perry)	Ralls	07110007
7048	Perry Lake #2	City Lake #2 (Perry)	Ralls	07110007
7142	Pershing St. Park Lake	Pershing St. Park Lakes	Linn	10280103
7408	Poague Wildlife Area Lake	Poague C,A, Lakes	Henry	10290102

7298	Potosi Lake Village	Potosi Lake	Washington	07140104
7445	Proctor Park Lake	Railroad Lake	Moniteau	10300102
7272	Purko Lake	Perco Lakes	Perry	07140105
7046	Railroad Lake	C & A Lake	Audrain	07110006
7306	Raintree Lake	Raintree Plantation Lake	Jefferson	07140104
7344	Rice Lake	Rice Lake East	Stoddard	08020204
7133	Ridgeway (Rockhouse) Lake	Rock House Lake	Harrison	10280102
7323	Ripley Co. Lake	Ripley Lake	Ripley	11010008
7233	Schell-Osage W.A.-Levee 3	Schell Lake	St. Clair	10290105
7280	Schuman Park Lake	Frisco Lake	Phelps	07140102
7203	Scrivner Lake	Winegar Lake	Cole	10300102
7253	Seetal Lake	See Tal Lake	Gasconade	10300200
7412	Seqiuota Park Lake	Sequiota Park Lake	Greene	11010002
7074	Smithville City Lake	Helvey Park Lake	Clay	10240012
7060	Squaw Creek-Main Pool	Squaw Creek NWR Pools	Holt	10240005
7277	St. Clair #1 Lake	St. Clair #1, Lake	Franklin	07140102
7301	St. Joe Park Lakes	Monsanto Lake	St. Francois	07140104
7318	Stokes Lake #1 (Arrowhead Lakes)	East Arrowhead Lake	Howell	11010010
7395	Stokes Lake #2 (Arrowhead Lakes)	West Arrowhead Lake	Howell	11010010
7067	Sugar Lake	Lewis & Clark Lake	Buchanan	10240011
7260	Summerset Lake	Summerset & Fisherman's Lakes	Jefferson	07140101
7256	Sunfish Lake (Spanish L Pk)	Sunfish Lake	St. Louis	10300200
7261	Sunrise Lakes	Sunrise Lake	Jefferson	07140101
7449	Swiss Lake Development Lake	Boggs Lake	Gasconade	10290203
7366	Tea Lake	Tea Lake #1	Gasconade	07140103
7292	Timberline Lake	Lane Lake	Washington	07140102
7242	Timberridge, Lake	Timber Ridge, Lake	Gasconade	10290203
7450	Tobacco Hills, Lake	Tobacco Hills Lake	Platte	10240011
7035	Tom Sawyer Lake (Mk. Twain SP)	Tom Sawyer, Lake (Mark Twain SP)	Monroe	07110006
7414	Torino Lake	Torino, Lake	Franklin	07140102
7127	Trenton Lower Lake	Trenton, Lake (Lower)	Grundy	10280102
7128	Trenton Upper Lake	Trenton, Lake (Upper)	Grundy	10280102
7451	Twin Lake	Twin Lakes	Boone	10300102
7341	Tywappity Community Lake	Tywappity, Lake	Scott	08020204

7154	Unionville (New) Lake	Unionville Reservoir	Putnam	10280201
7153	Unionville Lake (Thunderhead, Lake)	Thunderhead, Lake	Putnam	10280201
7274	Upper Big Lake	Robert G. Delaney Lake	Mississippi	08020201
7032	Vandalia Lake	Vandalia Reservoir	Pike	07110007
7453	Wallace SP Lake	Allaman, Lake	Clinton	10280101
7336	Wapappello, Lake	Wappapello, Lake	Wayne	08020202
7250	Wellsville Lake	Wellsville City Lake	Montgomery	10300200
7454	Wellsville Quarry	Sportsman Lake	Montgomery	10300200
7251	Whetstone Creek W.A. Lake	Whetstone Creek C.A. Lakes	Callaway	10300200
7050	White Area Lake (Lake Whiteside)	Whiteside, Lake (White Memorial SWA)	Lincoln	07110008
7354	Wolf Bayou	Wolf Bayou, Mud Bayou	Pemiscot	08010100
7110	Worth County Lake	Worth County Community Lake	Worth	10280101